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4.5.1 INTRODUCTION

4.5.1.1 Reader's Guide

The Biological Resources section of the EIS/EIR is comprehensive, complex, and covers a wide range of important scientific issues—from Project impacts to special-status plants to the adequate width of a wildlife crossing. By necessity, this section contains technical information and vocabulary, and sometimes this can pose a challenge to the lay reader. Therefore, to ensure that this section functions properly as a public disclosure document, a "Reader's Guide" has been prepared that describes the contents of the various biology subsections, explains their importance to the overall Project impacts analysis, and identifies where in the document one can locate specific data or discussions.

4.5.1.1.1 Organizational Scheme

The Biological Resources section is organized much like the other sections of the EIS/EIR. For example, all discussions are broken down into the Project's three main areas: the Newhall Ranch Specific Plan (Specific Plan) and the VCC and Entrada planning areas. The RMDP and the SCP are provided in **Appendix 1.0**. For each of these areas, this section provides individualized assessments of existing biological conditions, anticipated Project impacts, and proposed mitigation measures. Also, like the other sections, the Biological Resources section begins by explaining the relationship between the proposed Project and the Newhall Ranch Specific Plan Program EIR, which was certified by the County of Los Angeles on May 27, 2003, and addressed many of the same geographical areas and resource impacts evaluated in this EIS/EIR. The section then describes the relationship between the proposed RMDP and the SCP on one hand, and the Newhall Ranch Specific Plan, VCC, and Entrada developments on the other. These discussions are meant to orient the reader and provide both an historical and a geographical context for the biological analyses to follow.

Before describing the biological conditions at the Project area, however, this section: (1) explains the various federal, state, and local regulations that govern the proposed Project and drive the biological impacts analysis; (2) identifies the various permits and approvals the applicant must obtain to move forward with the proposed Project and alternatives; (3) provides a summary of the scientific literature that was reviewed during the preparation of the biological analysis; and (4) describes the survey methodology used to assess biological resources affected by the proposed Project and alternatives. Again, this prefatory information provides valuable background information and helps to frame the more detailed and technical discussions that come later.

4.5.1.1.2 Regulatory Setting

The regulatory setting consists of those federal, state, and local statutes and regulations that govern development of the proposed Project and alternatives. In this section of the EIS/EIR, the discussion focuses on those legal rules that affect biological resources. These include the following:

- The federal Clean Water Act (CWA) section 404, which governs whether and under what conditions construction projects—or debris from such projects—may lawfully intrude into the waters of the United States, including wetlands.
- The California Fish and Game Code section 1600, *et seq.*, which regulates streambed alteration in California and protects the state's rivers and streams, as well as the riparian habitats they support.
- The federal Endangered Species Act (ESA), which regulates impacts to threatened and endangered plants, animals, and insects. The federal ESA requires, among other things, that federal permitting agencies, such as the U.S. Army Corps of Engineers (Corps), consult with the U.S. Fish and Wildlife Service (USFWS) to determine whether the project under review would jeopardize the survival of any federally protected species.
- The California Fish and Game Code section 2080, which regulates impacts to state-listed species.
- The California Fish and Game Code sections 3511, 4700, 5056, and 5515, which address what are known as "fully protected" species. Under the California Fish and Game Code, it is illegal to "take" (*i.e.*, to kill) any "fully protected" species.
- The National Environmental Policy Act (NEPA), which requires that federal permitting agencies—such as the U.S. Army Corps of Engineers here—assess a proposed project for its potential impacts to the human environment.
- The California Environmental Quality Act (CEQA), which, like NEPA, requires that the lead approving agency—in this case, the California Department of Fish and Game (CDFG)—analyze the environmental impacts of the project under review.

These statutes and regulations, either directly or indirectly, dictate the type and rigor of the impacts analysis set forth in this section of the EIS/EIR. They impose on federal, state, and local agencies the duty to study impacts to biological resources and to ensure they have been mitigated to the extent feasible before granting federal and state permits.

4.5.1.1.3 Environmental Setting

To prepare a proper impacts analysis, the effects of the proposed Project and alternatives must be tested against a baseline. Under NEPA and CEQA, that baseline is known as the "Environmental Setting," which consists of the existing physical conditions within the impact area of a project. With large, complex projects, such as the RMDP and the SCP, the lead agency must conduct significant research to establish a project's existing conditions. This research takes two forms: (1) a review of the relevant scientific literature; and (2) surveys of the vegetation communities, plants, and wildlife on the project area. This latter effort typically requires biologists to walk large portions of the property, taking careful notes of the various plant and animal species they observe. These notes, often referred to as "field data," form the bedrock of the existing conditions discussion.

4.5.1.1.3.1 *Existing Conditions by Project Planning Area*

As indicated above, the Project area is divided into three planning areas—the Specific Plan, VCC, and Entrada. While these planning areas share many topographic features and biological resources, they are nevertheless unique. It is important to understand the resources that each one supports, as those resources often differ from one planning area to the next. Knowing what these resources are and where they are located will assist the reader in evaluating the impacts that will occur in each planning area should CDFG and the Corps approve the proposed Project.

Note that within each planning area discussion, the existing conditions are broken down into four basic categories: (1) past and current land use; (2) vegetation communities and land covers; (3) soils; and (4) special-status species. For purposes of conducting a biological resources impact study, these four topics largely define the environmental baseline:

- *"Past and current land use"* simply describes the manner in which human activities have affected the planning area and identifies those past and present projects or commercial operations that have influenced the existing environment.
- *"Vegetation communities and land covers"* describes in detail the flora within each planning area and identifies where key vegetation and land cover types are located on site.
- *"Soils"* describes the various soil types that exist in each planning area. Soil type often dictates what can grow or reside, and what can be constructed, at a given location.
- *"Special-status species"* describes those plants and animals (including invertebrates) on site that have special federal, state, or local designations due to their rarity, ecological importance, and/or their susceptibility to potential extinction. In most cases, project-

related impacts to special-status species must be avoided or minimized to the extent feasible. Note that the EIS/EIR makes a special point of identifying where occurrences of San Fernando Valley spineflower are located, as these will, in some cases, form part of the proposed Project's spineflower preserve.

Within the RMDP discussion—which is by far the longest—the EIS/EIR includes sub-discussions on the River Corridor Special Management Area/Significant Ecological Area (SMA/SEA) 23, the High Country SMA/SEA 20, the Salt Creek area, and Open Area. These four areas have special importance, as they are largely undisturbed and support a wide range of special-status plant and animal life. For this reason, the EIS/EIR provides a focused inventory of the special-status species and vegetation communities, and associated soils that exist in these four areas.

Unlike the Specific Plan, the VCC and Entrada planning areas include no SMAs. They do, however, include lands that support San Fernando Valley spineflower and may be included in the proposed Project's spineflower preserve.

4.5.1.1.3.2 *Existing Conditions by Biological Resource*

The geographic limits of many biological resources do not coincide with the boundaries of the Project planning areas. For this reason, a planning-area-by-planning-area assessment of existing biological conditions may not describe clearly the overall, Project-wide conditions of particular resources, such as oak trees and arroyo toads, a federally listed endangered species known from the Santa Clara River. To address this potential problem, the EIS/EIR includes a separate discussion of each key biological resource on site.

This discussion is broken down into the following seven sub-topics:

- *Vegetation communities.* As indicated above, vegetation communities are plant matrices where the various species exist interdependently but are usually dominated by one to a few particular species. For example, although coastal scrub communities support a wide array of plants, two of the most dominant species on site are California sagebrush and California buckwheat.
- *Unique landscape features.* For purposes of the proposed Project, the "unique landscape features" consist of the River Corridor SMA/SEA 23, the High Country SMA/ SEA 20, the Salt Creek area, and Middle Canyon Spring. These areas are of special ecological significance due to their riparian resources and, in the case of the High Country SMA/SEA 20 and Salt Creek area, their upland habitat, all of which support a diverse collection of special-status plant and wildlife species.

- *General wildlife*. As the name suggests, general wildlife consists of those birds, fish, invertebrates, mammals, reptiles, and amphibians that exist within the Project area but have no special status or protective designation.
- *Special-status vegetation communities*. Some vegetation communities on site are rare or provide habitat for special-status species. For these reasons, they require special protection. For example, the purple needlegrass community is the only vegetation community on the Project site that is dominated by native grasses. The other grasslands on site are dominated by invasive, non-native species, such as bromes and wild oats.
- *Special-status plants*. Individual plant species that have been designated as rare, threatened, or endangered by CDFG or USFWS qualify as special-status plants. The special-status plant category also includes "candidate species" (plants proposed for listing), "species of concern" (plants of importance to local regulatory agencies), and plants considered sensitive by the other organizations that have expertise in plants indigenous to the area, such as the California Native Plant Society (CNPS). Note that there are 15 special-status plants in the Project area. Among these is the state-listed endangered San Fernando Valley spineflower.
- *Special-status wildlife*. This category includes those birds, mammals, invertebrates, fish, reptiles, and amphibians that CDFG and/or USFWS have designated as rare, threatened, or endangered. It also includes "candidate species," "Species of Special Concern," "Special Animals," and "Watch List" species, as designated by CDFG. In addition, this wildlife category contains a special grouping of animals, known as "Fully Protected" species. Under California Fish and Game Code sections 3511, 4700, 5056, and 5515, Fully Protected species may not be "taken" under any circumstances. According to recent surveys, five Fully Protected species reside in or use the Project area at least occasionally (or have the potential to do so)—the golden eagle, the American peregrine falcon, the white-tailed kite, the ringtail cat, and the unarmored threespine stickleback. The Project area also supports one "Specially Protected Mammal," the mountain lion.
- *Wildlife habitat connections and buffers*. To survive and reproduce, wildlife species must be able to move safely between key habitat areas. For this reason, habitat connectivity is critical to the overall health and functionality of the ecosystems on site. This subsection of the EIS/EIR will address three different kinds of habitat connections—landscape-level habitat linkages, local wildlife corridors, and local wildlife crossings—and will also address buffer zones, which serve a slightly different function. *Linkages* are relatively large open space areas that: (1) contain "live-in" natural habitat; and (2) connect two larger adjacent habitat areas. *Corridors*, by contrast, are narrower and more linear, and allow species to traverse between two habitat areas; however, they typically do not provide "live-in" habitat. *Wildlife crossings* usually are manmade structures that permit

animals to traverse obstacles, such as paved roads, that fragment larger habitat areas. *Buffers* are habitat areas—either preserved or created—that separate the urban development edge from a valued biological resource, thus blunting the impacts of the former on the latter.

Each of these seven biological resource categories plays a role in the ecological functions of the Project area; and each has the potential to be affected by the proposed Project. When viewed together, they form the "existing conditions" baseline for identifying and evaluating potential impacts to biological resources.

4.5.1.1.4 Impact Significance Criteria

All analytical sections of this EIS/EIR—from Air Quality to Traffic—include a list of criteria that, when applied to the particular impact at hand, will help the decision maker and the public determine whether the impact is significant and thus requires mitigation. The Biological Resources section is no different, except that its significance criteria are specially tailored to biological concerns.

Specifically, the Corps and CDFG will apply the following seven significance criteria to the biological resource impacts identified in this section:

The proposed Project and alternatives would create a significant impact if they:

1. *Cause a substantial effect, via habitat modification, on special-status species or violate state or federal conservation laws.* This criterion is important because a project's impacts to habitat are sometimes severe enough to interrupt the necessary behaviors and activities of wildlife. Such activities include foraging, finding or building shelter, reproduction, and migration. This criterion also addresses impacts that may violate regulations and statutes specifically designed to protect plants and animals, such as the federal Migratory Bird Treaty Act and California Fish and Game Code section 3503.

2. *Cause a substantial effect on riparian habitat or special-status vegetation communities.* This criterion is important because riparian habitat (*i.e.,* habitat near rivers and streams) and special-status vegetation communities are relatively rare, provide important ecological values, and support an unusually diverse range of wildlife species. For this reason, they warrant special protection.

3. *Cause substantial effect on federally protected wetlands.* Wetlands—even more than riparian habitats—are increasingly rare. Moreover, they provide vital

resources to a host of special-status plants and animals. As a result, project-related impacts to wetlands, even if small, will usually be considered significant.

4. *Substantially interfere with movement of native or migrant species or wildlife corridors or substantially interfere with wildlife use of nursery sites.* As indicated above, many wildlife species need to move within or between habitat areas, as such movement enables the animals to hunt, forage, locate shelter when necessary, find mates for reproduction, and disperse. Therefore, it is imperative that the proposed Project and alternatives not interfere unduly with wildlife corridors. Nursery sites—those unique locations where animals give birth and raise their young (such as rookeries for birds)—are critical to the reproductive success of the species in question. For this reason, these sites are given special protection.

5. *Conflict with local policies that protect biological resources.* In addition to state and federal rules protecting certain species and types of habitat, most local agencies—such as Los Angeles County—have their own policies designed to preserve the integrity of biological resources within their respective jurisdictions. It is important that the proposed Project and alternatives comply with these policies; where they do not, a significant impact may result.

6. *Cause scouring of any riverbed, resulting in loss of aquatic, wetland, or riparian habitats.* The proposed Project and alternatives have the potential to increase the amount of water that enters local and regional waterways. If the increase is substantial enough, the heightened water flows may scour the affected streams and riverbeds, effectively destroying aquatic, wetland, and even riparian habitats. This criterion addresses whether and to what extent the proposed Project and alternatives would have significant scouring effects.

7. *Substantially reduce the habitat of fish or wildlife species, or cause the populations of such species to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce or restrict the range of a rare, threatened, endangered, or special-status species.* This criterion overlaps somewhat with criteria 1 through 3, but it also addresses other issues, such as reductions in population levels and the elimination of an entire plant or animal community, which can happen when a species' entire range is contained within a project site.

4.5.1.1.5 Analysis of Project Impacts

The heart of any EIS/EIR is the analysis of the project's impacts to existing environmental conditions. With respect to the Biological Resources section, this analysis focuses on five impact categories: (1) Project impacts to vegetation communities and land covers; (2) Project impacts to unique landscapes; (3) Project impacts to general wildlife (*i.e.,* non-special status), as organized by guild; (4) Project impacts to wildlife connectivity; and (5) Project impacts to special-status plants and wildlife.

For purposes of the impact analysis, Alternative 2 is the proposed Project. Therefore, the assessment of Project effects is based on the particular components and design features of Alternative 2. This does not mean, however, that the impacts of Alternatives 3 through 7 are disregarded. On the contrary, they are fully discussed and evaluated both independently and in relation to the Alternative 2 impacts, providing the reader with a comparative analysis, as required under NEPA and CEQA. Note that this comparative analysis takes place with respect to all four categories listed above.

To gain a better understanding of the types of impacts assessed in this section, a brief description of those impacts is provided below:

4.5.1.1.5.1 *Impacts to Vegetation Communities and Land Covers*

The Project area lies within the Santa Clara River Watershed (SCRW), which is largely undeveloped. As a result, the Project area supports a wide variety of vegetation communities and land covers, most of which would be affected by the proposed Project and alternatives to some extent. These vegetation communities and land covers include the following:

- Riparian communities. Riparian communities consist of the various plants, shrubs, and trees located near, and dependent on, recurrent sources of water, such as a stream, wetland, or pond. Because the Project area is located within the SCRW, it contains a wide array of riparian vegetation communities, from sand and gravel bars dominated by willow saplings and cattails to river banks dominated by mature cottonwood trees with full understories of smaller trees and shrubs. Riparian communities in the Project area are highly sensitive and of significant biological value, as they support a variety of special-status plants and animals. These include the federally listed arroyo toad, the federally listed California red-legged frog, the federally listed least Bell's vireo, the federally listed Santa Ana sucker, the federally listed southwestern willow flycatcher/state-listed willow flycatcher (only the southwestern subspecies is federally listed), as well as two California Fully Protected Species—the white-tailed kite and the unarmored threespine stickleback (also federally listed as endangered). (The Fully

Protected ringtail cat, which uses riparian communities, has not been documented in the Project area, but is considered to have some potential to occur due to the presence of suitable habitat.)

- California annual grasslands, Agriculture, Disturbed land, and Developed land. California annual grassland and these manmade land covers are characterized by some form of human disturbance or activity. For example, the California annual grasslands in the Project area tend to be characterized by a mixture of weedy, introduced grasses, such as bromes, wild oats, and Russian thistle. These species typically emerge following grazing, fires, discing, and other forms of mechanical disturbance. Agricultural activities also comprise a significant portion of the Project area. In addition, some of the Project area already has been disturbed or developed for industrial or urban purposes. These land covers, however, are not completely devoid of biological value. California annual grasslands support a number of special-status plants, including the San Fernando Valley spineflower, the Peirson's morning-glory, and the slender mariposa lily. Grasslands and agricultural areas also provide important foraging habitat for raptors (birds of prey), such as the golden eagle, white-tailed kite, and American kestrel.
- Coastal scrub communities. Coastal scrub communities on site are characterized by a variety of soft, low, aromatic shrubs that are adapted to drought conditions, such as California sagebrush and California buckwheat. These communities typically develop on south-facing slopes and other locations that receive little rainfall. Coastal scrub exists within large areas of the Specific Plan and within the VCC and Entrada planning areas. They provide habitat for a wide variety of special-status species, including the golden eagle, southern California rufous-crowned sparrow, coast horned lizard, and mountain lion. They also provide dispersal habitat for the federally listed coastal California gnatcatcher.
- Chaparral communities. Chaparral communities are drought- and fire-adapted communities of broad-leafed shrubs that often form dense, impenetrable stands. They develop primarily on north-facing slopes and in canyons. Common chaparral species include chamise, hoaryleaf ceanothus, scrub oak, laurel sumac, and black sage. There is actually very little chaparral within the Project area. These communities are limited to a few small locations within the southern portion of the Entrada planning area. Chaparral provides habitat for a number of special-status plants, such as the Peirson's morning-glory and the island mountain mahogany, as well as for a wide array of special-status wildlife, including the rosy boa, loggerhead shrike, and mountain lion.
- Oak woodland communities. Oak woodland on site actually consists of four different communities—coast live oak woodland, mixed oak woodland, valley oak/grass, and valley oak woodland. Each of these communities supports a variety of special-status

birds, such as white-tailed kite, oak titmouse, and Nuttall's woodpecker, and special-status reptiles, such as San Bernardino ringneck snake. They also provide general cover for larger mammals, such as mountain lions.

- Purple needlegrass. Purple needlegrass is rare in southern California and, even where found, it is usually mixed with a variety of non-native grasses and forbs. For purposes of this EIS/EIR, purple needlegrass is defined as needlegrass that is composed of at least 10% native grasses. There is less than one acre of purple needlegrass in the Project area, and it is located in the High Country SMA/SEA 20 in the south-central portion of the Specific Plan.
- California walnut woodland. As its name suggests, California walnut woodland is dominated by native walnut trees. This vegetation community is considered sensitive by CDFG and provides habitat for raptors, such as the merlin and sharp-shinned hawk, and for special-status reptiles, such as the San Bernardino ringneck snake and the coastal western whiptail. There are only about 27 acres of California walnut woodland in the Project area, and it is located in the High Country SMA/SEA 20 and the Salt Creek area.

With respect to each of these vegetation communities and land covers, the Biological Resources section analyzes three different kinds of Project-related impacts—*direct* impacts (those caused by the direct implementation of the RMDP and the SCP), *indirect* impacts (those occurring within the development "footprint" of the Specific Plan, VCC, and Entrada planning areas), and *secondary* impacts (those caused by implementation of the RMDP, the SCP, Specific Plan, VCC, and Entrada projects but occurring outside the actual development envelopes or Project footprint). These effects are further broken down into *temporary* impacts (which are due to construction activities for the RMDP and the SCP only) and *permanent* impacts (which are inherent to the Project itself and would remain after the Project is completed).

Impacts to vegetation communities and land covers are expressed in terms of acres temporarily disturbed or permanently lost, with permanent impacts also expressed as the percentage of the total habitat currently on site. For example, the RMDP part of the proposed Project would have *direct* permanent impacts to 28 acres of chaparral communities, of which there are approximately 2,146 acres in the Specific Plan/RMDP site. Thus, the RMDP portion of the Project would cause the loss of 1.3% of the chaparral on site.

Each impact to vegetation communities is then tested against the applicable significance criteria to determine: (1) whether the impact is "significant" as that term is used in NEPA and CEQA; and (2) whether and to what extent the impact must be mitigated. If an impact is deemed "adverse but not significant," or "less than significant," then no mitigation is required and the analysis ends there. The phrase "adverse but not significant" is most commonly used in the

analysis and generally refers to situations where there is a measureable impact (*e.g.*, loss of quantified acreage of habitat), but which does not rise to the level of "significant." The phrase "less than significant" is usually used in the context where, prior to mitigation, there would be no measurable residual impact. For example, southern steelhead is not expected to spawn or rear young on site due to lack of suitable habitat, but a vagrant may rarely occur. For this species, loss of habitat is considered to be less than significant because, although it could occur, it is not a measureable or predictable impact. If an impact is deemed "significant, absent mitigation," the EIS/EIR then provides a mitigation strategy designed specifically to address the impact under review and reduce its severity. The mitigation strategy is composed of various measures, which, if implemented, will either avoid the impact or reduce its effect on the vegetation community in question.

The final part of the analysis is determining whether the impact, once mitigated, would remain "significant" or be reduced to "adverse but not significant," "less than significant" (with the same distinction as described above), or "not significant because no impact would occur," if complete avoidance is possible. Under CEQA, any impact that remains significant even after mitigation (*i.e.*, significant and unavoidable) will require special findings by the lead agency (in this case, CDFG) if it approves the proposed Project. Specifically, CDFG would have to adopt a Statement of Overriding Considerations indicating that the Project brings certain social, economic, environmental, and/or technological benefits that outweigh its significant and unavoidable impacts to the environment. The primary purpose of the mitigation strategy, however, is to adopt all feasible mitigation measures to reduce impacts to less-than-significant levels.

The following example illustrates the analytical sequence described above:

The proposed Project is expected to result in the permanent loss (both direct and indirect) of 116 of the 1,189 acres of riparian communities on site. Given the biological importance of riparian habitat, this would be a significant impact, absent mitigation. To reduce this impact to a level that is less than significant, the EIS/EIR recommends 20 mitigation measures, including habitat restoration/enhancement, mitigation banking, and riparian vegetation and oak tree replacement. These mitigation measures are designed to restore the functions and services provided by the riparian vegetation communities lost as a result of development. The EIS/EIR thus concludes that the proposed Project's direct and indirect impacts to riparian communities, once mitigated, will be "adverse but not significant." The term "adverse" is included because even with mitigation, some residual impacts would occur.

This same analytical approach is applied to California annual grasslands, agriculture, disturbed and developed lands; coastal scrub; chaparral; oak woodlands; purple needlegrass; and California walnut woodlands.

4.5.1.1.5.2 *Impacts to Unique Landscape Features*

The EIS/EIR identifies "unique landscape features" that are within the Project area and may be affected either by implementation of the RMDP or build-out of the Specific Plan, VCC, or Entrada planning areas. These are: (1) the River Corridor SMA/SEA 23; (2) the High Country SMA/SEA 20; (3) the Salt Creek area; and (4) Middle Canyon Spring. Each of these unique landscape features (except Middle Canyon Spring) is subject to a conservation and public access easement running in favor of the County of Los Angeles. These areas have been singled out for protection and enhancement due to the high level of biodiversity that exists within each. The River Corridor SMA/SEA 23, for example, which extends the length of the Project area along the Santa Clara River, supports a wide range of native species and habitats, many of which are special status and/or declining in the region. The High Country SMA/SEA 20 also supports native species and habitat, although they tend to be upland communities rather than riparian. The Salt Creek area, on the other hand, provides an important riparian travel corridor for wildlife. Middle Canyon Spring likewise provides riparian habitat and, in addition, supports the undescribed snail and undescribed sunflower, two unique species.

Impacts to the River Corridor SMA. Given that the RMDP, by design, would involve the construction of hydrological improvements at various points along the Santa Clara River, it would necessarily have impacts to the River Corridor SMA/SEA 23. Specifically, the RMDP would cause temporary and permanent loss of habitat for special-status species that utilize riparian and wetland areas within the River Corridor SMA/SEA 23. Build-out of the Specific Plan area would likewise result in the loss of riparian habitat within the SMA. The EIS/EIR discusses these impacts in detail, and also describes project secondary or "edge" effects on the River Corridor SMA/SEA 23. Note, however, that these impacts will be addressed through a comprehensive mitigation strategy, also described in the EIS/EIR.

Impacts to the High Country SMA/Salt Creek Area. Implementation of the RMDP and the SCP would result in construction-related impacts to the High Country SMA/SEA 20 and Salt Creek area. Such impacts would result in loss of habitat used by special-status species, including southwestern pond turtle, Cooper's hawk, coast horned lizard, and others. Build-out of the Specific Plan area would have indirect impacts to the High Country SMA/Salt Creek area as well, although these would be relatively limited due to the lack of development within the High Country SMA/SEA 20 and Salt Creek area.

Most of the impacts would occur along the edge that these unique landscape features share with the proposed subdivisions. As with Project-related impacts to the River Corridor SMA, the impacts to the High Country SMA/SEA 20 and Salt Creek area will be mitigated through a combination of habitat restoration, creation, enhancement, and preservation.

Impacts to Middle Canyon Spring. The RMDP and the SCP have the potential to cause direct impacts to Middle Canyon Spring. In addition, as Middle Canyon Spring is the only location where the undescribed sunflower and undescribed snail are expected to occur, it is possible that the RMDP and the SCP would adversely affect these species as well. Build-out of the Specific Plan could also affect Middle Canyon in the form of habitat loss. However, this impact is not likely to disturb the undescribed sunflower or undescribed snail, as neither species occurs in the areas potentially affected by the RMDP or Specific Plan projects. Mitigation measures similar to those recommended for the impacts to the River Corridor SMA/SEA 23 and High Country SMA/SEA 20 and Salt Creek area also have been recommended to reduce Project-related impacts to Middle Canyon Spring.

4.5.1.1.5.3 *Impacts to Common Wildlife – The "Guild" Analysis*

After discussing impacts to vegetation communities and unique landscape features, the EIS/EIR shifts its focus and evaluates project effects on "Common Wildlife," a term that encompasses those insects and animals that reside in or use the Project area but do not qualify as "special-status" species, as defined in section in **Subsection 4.5.3.4.5**, **Subsection 4.5.3.4.6**, and listed in **Subsection 4.5.3.1** of this EIS/EIR. Because common wildlife species have no formal conservation status, they have been grouped into "guilds," which correspond to their common wildlife classification and, in some cases, to the habitat they use and their relative mobility. Thus, for example, in addition to the *Insect* guild, the *Fish* guild, and the *Aquatic Mollusk* guild, there is also a *Bird – Upland Woodland* guild, and a *Mammal – Low Mobility* guild, among others.

The purpose of the Common Wildlife impact analysis is to determine the extent to which the various components of the proposed Project and alternatives would affect these common animal species, that, nonetheless, probably provide important biological functions in the overall ecosystem (*e.g.*, as predators or prey). Most NEPA and CEQA documents, including this one, tend to focus their analyses on species with special conservation designations, such as federally listed or state-listed plants and animals. While this is a rational approach to evaluating a project's biological impacts, it tends to ignore those more common species, which, despite having no protective designation, nevertheless likely play key roles in the overall ecosystem of the Project

area. To give those species the consideration they deserve, this EIS/EIR evaluates how they might be affected by the proposed Project and alternatives.

Again, however, due to the large number of common wildlife species in the Project area, this analysis is done on a guild level, not on a species level. In addition, impacts to guilds are expressed in terms of habitat loss, not in terms of harm to or loss of individual animals.

Finally, as with all other impacts discussions, the analysis of common wildlife impacts starts with Alternative 2 and then addresses Alternatives 3 through 7. Mitigation for each impact, by alternative, is provided at the back of the analysis.

4.5.1.1.5.4 *Impacts to Wildlife Movement and Habitat Connectivity*

While some wildlife species are able to reproduce, find food and shelter, and rear their young in a single, confined space, most species need some freedom of movement to successfully complete all aspects of their life histories. For this reason, it is important to preserve wildlife movement corridors, including connections between habitats. The EIS/EIR divides its analysis of project-related impacts to wildlife movement into four elements:

- Background information on the specific wildlife movement needs of each wildlife guild.
- Impacts to landscape-scale habitat linkages, resulting first from Alternative 2 and then from Alternatives 3 through 7. Note that landscape-scale habitat linkages constitute the largest type of wildlife connection. They not only provide live-in habitat for many species, they provide adequate cover for such large animals as mountain lions and mule deer.
- Impacts to wildlife corridors, resulting first from Alternative 2 and then from Alternatives 3 through 7. Typically, wildlife corridors are not as wide as landscape-scale habitat linkages and for that reason provide live-in habitat for fewer (and generally smaller) species. These corridors, however, do serve a critical wildlife movement function, as they connect core habitat areas and allow animals to travel in relative safety between them.
- Impacts to wildlife crossings, resulting first from Alternative 2 and then from Alternatives 3 through 7. Unlike habitat linkages and wildlife corridors, wildlife crossings usually provide no live-in habitat, are relatively short, and serve primarily as means for wildlife to avoid or bypass obstacles that otherwise fragment habitat. An example of a wildlife crossing is a road underpass.

As explained in the EIS/EIR, implementation of the RMDP and the SCP, under Alternative 2, would require construction of three large-span bridges as well as bank protection within the Santa Clara River corridor. These structures would affect existing landscape-scale habitat linkages, but would not appreciably diminish their ability to function. Once mitigated and protected with conservation easements, the River Corridor SMA/SEA 23, the High Country SMA/SEA 20, and the Salt Creek area will be able to serve the large-scale mobility needs of the wildlife species on site. A third linkage, known as the Castaic/Halsey corridor, also would remain intact and provide connectivity between the Santa Clara River and upland habitats to the northeast of the Project area, extending to Castaic Lake and the Angeles National Forest.

The proposed Project and alternatives also would have impacts to local habitat connectivity and wildlife movement. Specifically, planned development may constrain existing wildlife corridors or cause some of them to become dead-ends. The EIS/EIR evaluates the 15 wildlife corridors on site and determines which ones would be adversely affected by the proposed Project and alternatives. Where the proposed Project or alternatives would eliminate or significantly constrain a particular corridor, mitigation measures are recommended.

With respect to wildlife crossings, these would not be inhibited by implementation of the RMDP or any other aspect of the proposed Project or alternatives, although some changes in wildlife behavior are expected as a result of secondary impacts, such as traffic noise and lighting. These impacts, however, are not anticipated to be significant. For this reason, no mitigation measures have been recommended for impacts to wildlife crossings.

One final note on wildlife movement: Due to the importance of habitat connectivity, in all its various forms, this section relies upon a study, sometimes referred to as the "Conceptual Regional Open Space Connectivity Report" (Penrod *et al.* 2006), to identify which linkages, corridors, and crossings are of greatest value to existing wildlife. The findings and recommendations of this report are discussed in the EIS/EIR, and the Penrod *et al.* habitat linkage design is incorporated into the mitigation measures.

4.5.1.1.5.5 *Impacts to Special-Status Species*

Together, CDFG, the Corps, and the applicant have identified 91 plant and wildlife species that qualify as "special-status" species, as that term is defined in this EIS/EIR. This does not mean, however, that all 91 species are equally sensitive or have the same conservation designation or require the same level of protection. In fact, the 91 "special-status" species fall along a sensitivity continuum.

At the extreme or "most sensitive" end of this continuum are species that are: (1) listed as endangered or threatened under the federal ESA; (2) listed as endangered or threatened under

CESA; and (3) listed as California Fully Protected. Impacts to such species are tightly controlled by federal and state law, and may require incidental "take" permits following consultation with USFWS and CDFG. In the case of Fully Protected species, impacts rising to the level of "take" are statutorily prohibited. Listed species include the arroyo toad, the southwestern willow flycatcher/willow flycatcher, and the least Bell's vireo, among others. Fully protected species known to occur on site, or with the potential to occur on site, include the unarmored threespine stickleback, ringtail cat, white-tailed kite, golden eagle, and American peregrine falcon.

Next in line on the sensitivity continuum would be species currently under consideration for listing under either the federal ESA or CESA. These species, known as "candidate" species, are often treated as if they have already been approved for listing. For this reason, impacts to candidate species are reviewed with a high level of scrutiny. The only federal candidate species observed in the Project area are the western yellow-billed cuckoo and the San Fernando Valley spineflower, both of which are already state-listed species. No state candidate species exist on site.

Occupying the middle position on the sensitivity scale are animals that CDFG has identified as "Species of Special Concern." CDFG applies this designation to species which, while not warranting placement, or which have not been fully analyzed for placement on the endangered species list, are either rare or declining in numbers within their home range. Such species include, among others, the western spadefoot toad, the southwestern pond turtle, the short-eared owl, and the arroyo chub.

Next down the line are "Specially Protected Mammals" such as the mountain lion, and "Trust Resources" such as the mule deer and black bear. These animals, while neither rare nor documented to be experiencing significant population declines, are nevertheless emblematic of the California wilderness and play important roles in the regional ecosystems they inhabit.

At the low end of the sensitivity continuum are those species placed on CDFG's "Watch List" or identified by CDFG as "Special Animals." These species usually still are relatively common and have widespread ranges, but are being tracked by CDFG because their habitats may be under pressure from conversion and development or they may be vulnerable to anthropogenic threats. Such species include, among others, the rufous hummingbird, the prairie falcon, and the coastal western whiptail.

Plant species, other than those listed under the federal ESA or CESA, are given sensitivity rankings based on criteria developed by CNPS.

Sensitivity and protective status are not the only things that distinguish the 91 special-status species evaluated in this EIS/EIR. The manner in which the species use the Project area also

differs among the species, and sometimes dramatically. For example, some birds, such as the southern California rufous-crowned sparrow spend their entire life cycle at the Project site, while others, such as the federally threatened coastal California gnatcatcher do not nest at the site or use it for any purpose other than dispersal. These distinctions can have a profound influence on the species-by-species impact analysis. If, for example, a listed species rarely uses the Project area even though suitable habitat exists on site to support it, impacts to that species are not likely to be significant, as the proposed Project and alternatives are not going to substantially disrupt its life cycle or harm individuals. On the other hand, if the proposed Project or the alternatives are expected to disturb a significant portion of the habitat used by, say, a "Special Animal," and if that Special Animal relies on that habitat for a substantial part of its life cycle, the impact likely would be deemed significant, absent mitigation. So while the protective designation and relative sensitivity of the species is important when determining impact significance, it is not the only factor. The manner and extent to which a given species uses the affected habitat also bear on the significance conclusion.

For each of the 91 special-status species, the EIS/EIR addresses direct, indirect, and secondary impacts. In addition, the direct and indirect impact analyses are further broken down into: (1) impacts to habitat used by the species and (2) impacts to individuals of the species. As with the other aspects of the biological analysis, the assessment of impacts to special-status species treats Alternative 2 as the proposed alternative and then compares its impacts with those of Alternatives 3 through 7. Thus, for example, the EIS/EIR indicates that, under Alternative 2, the Project would result in the permanent loss of 140 acres of suitable habitat for the coast horned lizard, while the other five alternatives would affect 138 acres (Alternative 3), 133 acres (Alternative 4), 157 acres (Alternative 5), 173 acres (Alternative 6), and 76 acres (Alternative 7), respectively. This summary for each alternative allows the reader to compare the various alternatives on an impact-by-impact basis.

4.5.1.1.5.6 *Mitigation Measures*

Under both NEPA and CEQA, any impact identified as "significant" must be feasibly mitigated to the extent feasible. In most cases, significant impacts can actually be mitigated to "less-than-significant" levels (also termed "adverse but not significant" in this EIS/EIR if residual impacts would occur). The biological analysis identifies a host of Project-related significant impacts, from loss of riparian vegetation to secondary effects on least Bell's vireo, a federally listed bird species. To address these impacts, the EIS/EIR recommends more than 160 mitigation measures. Some of these measures—identified by the abbreviation "SP"—were originally developed as part of the Newhall Ranch Specific Plan Program EIR but could not be implemented until an actual project was proposed for construction. In addition to the SP mitigation measures, the Biological Resources section includes new mitigation measures designed specifically to address the impacts

of the RMDP and the SCP, as well as those associated with build-out of the Specific Plan, VCC, and Entrada planning areas. These mitigation measures are identified by the abbreviation "BIO."

The reader will notice that some of the mitigation measures—especially those that create large habitat preserves—apply to a substantial number of biology impacts, including impacts to habitat, impacts to individuals, and secondary impacts, such as lighting and noise. This is by design. One of the basic tenets of conservation biology is that the best way to protect special-status and common species and fragile ecosystems is to create or preserve large areas of minimally fragmented habitat that contain a wide array of vegetation and support a diverse range of wildlife. For example, lighting impacts to a species can be reduced in part by providing a large protected area for the species that is not influenced by lighting.

However, not all impacts can be addressed adequately through the creation of habitat preserves. Some impacts are very specific in their effects. For example, build-out of the Entrada planning area is expected to disturb an existing bat roost. To offset this impact, the EIS/EIR recommends that the roost be replaced at a suitable location sufficiently removed from human interference. With the example of lighting, an additional mitigation measure to reduce lighting effects is to require that all lighting adjacent to open space areas be downcast or away from habitat to minimize the lighting impact along the open space–urban interface.

This mitigation approach—adding specific measures to generally applicable measures—runs consistently throughout the Biological Resources section. In fact, virtually every significant impact is addressed by a combination of both general and specific mitigation measures. Each such measure is described briefly after the impact it is designed to offset. A comprehensive description of each of the approximately 169 mitigation measures is provided at the end of the Biological Resources section.

4.5.1.1.5.7 *Summary of Significance Findings*

To assist the reader in locating a particular biology resource or impact, **Subsection 4.5.7**, Summary of Significance Findings, summarizes the impacts (and proposed mitigation where appropriate) for each affected vegetation community and land cover, each unique landscape feature, each common wildlife guild, each wildlife corridor, and each of the 91 special-status species.

4.5.1.2 Relationship of Proposed Project to Newhall Ranch Specific Plan Program EIR

The Specific Plan contains approximately 11,999 acres. The acreages of the land uses within the approved Specific Plan are listed in **Table 4.5-1**. The Specific Plan includes residential

development (and associated school sites, parks, and other facilities); mixed-use development (*e.g.*, commercial, residential, office); commercial development; business park uses; visitor-serving development; community facilities (*e.g.*, fire stations, library, water reclamation plant); and arterial roads and bridges on 3,763 acres. The 8,236 acres of open space includes the River Corridor SMA/SEA 23, High Country SMA/SEA 20, Open Area, and spineflower preserve (Dudek 2008D).

Table 4.5-1
Acreage of Each Approved Land Use in the Specific Plan Area

Approved Land Use	Acres
Open space	8,236[1]
Residential/commercial/non-residential/other development	3,763
Total	**11,999**

Notes:
[1] Open space refers to natural (preserved) and manufactured open space, and includes the Specific Plan's High Country SMA, the River Corridor SMA, Open Area, spineflower preserve, and other specified open space areas (primarily located within the Specific Plan's Estate Residential designation). Approximately 1,900 of the 3,420 acres of Open Area will be preserved as natural vegetation communities and existing land covers. Open space does not include the Salt Creek area, adjacent to the Specific Plan boundary, comprising about 1,517 acres. If the Salt Creek area were included, the total open space area would be approximately 9,753 acres (8,236 + 1,517 = 9,753).
Source: RMDP (Dudek 2008D).

This section provides a standalone assessment of the potentially significant impacts to biological resources associated with the proposed Project and alternatives; however, the previously certified Newhall Ranch environmental documentation provides important information and analysis for the RMDP and the SCP components of the proposed Project. Implementation of these Project components would require federal and state permitting, consultation, and agreements that are needed to facilitate development of the approved land uses within the Specific Plan area. Further, if approved, the proposed Project would establish comprehensive spineflower preserves within the Specific Plan area, also facilitating development of the approved Specific Plan. Due to this relationship, the Newhall Ranch environmental documentation, findings, and mitigation, as they relate to biological resources, are summarized below to provide context for the proposed Project.

Section 4.6 of the Newhall Ranch Revised Draft EIR (County of Los Angeles 1999) identified and analyzed the existing biological resources, potential impacts, and mitigation measures for the entire Specific Plan area. In addition, Section 5.0 of the Newhall Ranch Revised Draft EIR (County of Los Angeles 1999) identified and analyzed the potential impacts to biological resources and mitigation measures associated with construction and operation of the approved Water Reclamation Plant (WRP), which would treat the wastewater generated by the Specific

Plan. Thereafter, additional environmental analysis was conducted for the Specific Plan. Specifically, the Newhall Ranch Revised Additional Analysis, Section 2.3, Floodplain Modifications (County of Los Angeles 2003A) was prepared to further assess the biological effects of the Specific Plan caused by changes to the hydrology and hydraulics of the Santa Clara River. This additional analysis also examined in greater depth the Salt Creek corridor and Specific Plan consistency with Los Angeles County (County) General Plan policies pertaining to Significant Ecological Areas (SEAs). (See Newhall Ranch Revised Additional Analysis, Sections 2.2 and 2.4 (County of Los Angeles 2003A).)

Based on the Newhall Ranch environmental documentation, the Specific Plan was determined to result in significant impacts to sensitive biological resources. Thus, the Newhall Ranch environmental documentation required implementation of the Specific Plan's Resource Management Plan and several program-level mitigation measures, which the County determined reduced some but not all of the Specific Plan's impacts to identified sensitive biological resources.[1] **Table 4.5-2** summarizes the Specific Plan's impacts to biological resources, the applicable mitigation measures (SP-4.6-1 through SP-4.6-80; SP-5.0-30 through SP-5.0-32), and the County's significance findings after adopting the mitigation contained in the Newhall Ranch certified environmental documentation. Consistent with State CEQA Guidelines section 15093, the County's Board of Supervisors found that the Specific Plan offered acceptable overriding economic, legal, social, and other public benefits that outweighed the identified significant unavoidable impacts.

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
Loss of Habitat – As approved, implementation of the Specific Plan would result in the loss of 1,820 of the 5,183 acres of coastal scrub, 202 of the 1,213 acres of chaparral, and 1,480 of the 1,896 acres of non-native grassland habitat present on the site (when combined, 42% of these vegetation types would be lost).[a]	See measures listed below for impacts to special-status animal species and sensitive habitats.	Significant

[1] References to mitigation measures included in the Newhall Ranch Specific Plan Program EIR are preceded by "SP" in this EIS/EIR, to distinguish them from other mitigation measures discussed herein.

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
General Wildlife Impacts – Based on the amount of habitat lost (5,132 acres), the impact potential of implementation of the Newhall Ranch Specific Plan on the diminishment of habitat for wildlife or plants is considered significant.	See measures listed below for impacts to special-status wildlife species.	Significant
The impact potential of implementation of the Newhall Ranch Specific Plan on the movement of resident wildlife species is considered significant due to the reduction in open land available for wildlife movement between the River and upland areas.	See measures listed below for impacts to special-status wildlife species and habitats.	Significant
It is acknowledged that any loss of plant species listed as rare, threatened, or endangered is considered a significant impact. Those include the following:		
slender-horned spineflower (*Dodecahema leptoceras*) (significant if present)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
California Orcutt grass (*Orcuttia californica*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
Lyon's pentachaeta (*Pentachaeta lyonii*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
Nevin's barberry (*Mahonia nevinii*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
thread-leaved brodiaea (*Brodiaea filifolia*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
Santa Susana tarweed (*Hemizonia minthornii*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
Braunton's milk-vetch (*Astragalus brauntonii*)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-53	Not Significant
San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) (significant in Additional Analysis)	Mitigation Measures SP-4.6-53, SP-4.6-59, and SP-4.6-65–SP-4.6-80	Not Significant
short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*) (significant in Additional Analysis)[b]	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, SP-4.6-53, and SP-4.6-59	Not Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
Calochortus sp. (potentially significant in Additional Analysis depending upon actual species present)	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, SP-4.6-53, and SP-4.6-59	Not Significant
Dudleya sp. (potentially significant depending upon actual species present)[b]	Mitigation Measures SP-4.6-27, SP-4.6-34, SP-4.6-35, SP-4.6-53, and SP-4.6-59	Not Significant
Based on this analysis of indirect impacts to spineflower and other special-status plants, seven indirect impacts/edge effects are considered significant in connection with the proposed development of Newhall Ranch.	Mitigation Measures SP-4.6-53, SP-4.6-59, and SP-4.6-65–SP-4.6-80	Not Significant
Project construction and operation may have potential significant impacts to a number of special-status wildlife species through loss of habitat and/or decrease in water quality if impacts are unmitigated. Species include the following:		
Santa Ana sucker (*Catostomus santaanae*)	Mitigation Measures SP-4.6-44, SP-4.6-53, SP-4.6-55, SP-4.6-57, and SP-4.6-58	Not Significant
unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)	Mitigation Measures SP-4.6-53, SP-4.6-54, SP-4.6-55, SP-4.6-57, SP-4.6-58, and SP-4.6-59	Not Significant
arroyo chub (*Gila orcutti*)	Mitigation Measures SP-4.6-44, SP-4.6-53, SP-4.6-55, SP-4.6-57, and SP-4.6-58	Not Significant
arroyo toad (*Bufo californicus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
western spadefoot toad (*Spea hammondii*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Not Significant
silvery legless lizard (*Anniella pulchra pulchra*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
southwestern pond turtle (*Actinemys marmorata pallida*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Not Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
rosy boa (*Charina trivirgata*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
San Bernardino ringneck snake (*Diadophis punctatus modestus*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
two-striped garter snake (*Thamnophis hammondii*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Not Significant
coast [California] horned lizard (*Phrynosoma coronatum*)[c]	Mitigation Measures SP-4.6-27–SP-4.6-43, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
coast [San Diego] horned lizard (*Phrynosoma coronatum*)[c]	Mitigation Measures SP-4.6-27–SP-4.6-43, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
coast patch-nosed snake (*Salvadora hexalepis virgultea*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
least Bell's vireo (*Vireo bellii pusillus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-59	Not Significant
southwestern willow flycatcher (*Empidonax traillii extimus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-59	Not Significant
northern harrier (*Circus cyaneus*)	Mitigation Measures SP-4.6-27-SP-4.6-43, and SP-4.6-53	Significant
Cooper's hawk (*Accipiter cooperii*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
vermilion flycatcher (*Pyrocephalus rubinus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
yellow warbler (*Dendroica petechia brewsteri*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
summer tanager (*Piranga rubra*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	Mitigation Measures SP-4.6-27–SP-4.6-43, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
tricolored blackbird (*Agelaius tricolor*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
great blue heron (*Ardea herodias*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
great egret (*Ardea alba*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
snowy egret (*Egretta thula*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55 and SP-4.6-56	Not Significant
black-crowned night heron (*Nycticorax nycticorax*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
white-tailed kite (*Elanus leucurus*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
Swainson's hawk (*Buteo swainsoni*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
mountain plover (*Charadrius montanus*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
western least bittern (*Ixobrychus exilis hesperis*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
fulvous whistling duck (*Dendrocygna bicolor*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
Bell's sage sparrow (*Amphispiza belli belli*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
ferruginous hawk (*Buteo regalis*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
western burrowing owl (*Athene cunicularia hypugaea*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
sharp-shinned hawk (*Accipiter striatus*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
golden eagle (*Aquila chrysaetos*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant
pallid bat (*Antrozous pallidus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
pocketed free-tailed bat (*Nyctinomops femorosaccus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
Townsend's big-eared bat (*Corynorhinus townsendii*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
western mastiff bat (*Eumops perotis californicus*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
mountain lion (*Puma concolor*)	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-53	Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	Mitigation Measures SP-4.6-27–SP-4.6-43, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
San Diego desert woodrat (*Neotoma lepida intermedia*)	Mitigation Measures SP-4.6-27–SP-4.6-43, SP-4.6-53, SP-4.6-56, and SP-4.6-55	Significant
Yuma myotis (*Myotis yumanensis*)	Mitigation Measures SP-4.6-1–SP-4.6-26, SP-4.6-53, SP-4.6-55, and SP-4.6-56	Not Significant
Development of the Specific Plan would result in impacts to sensitive habitats including the following:		
Coastal sage scrub	Mitigation Measures SP-4.6-27–SP-4.6-43	Significant
Valley oak woodland and valley oak/grass	Mitigation Measures SP-4.6-27–SP-4.6-43	Significant
Elderberry scrub	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-60	Not Significant
Mainland cherry forest	Mitigation Measures SP-4.6-27–SP-4.6-43, and SP-4.6-61	Not Significant
Southern willow scrub	Mitigation Measures SP-4.6-1–SP-4.6-26	Not Significant
Southern cottonwood–willow riparian forest and southern willow riparian woodland	Mitigation Measures SP-4.6-1–SP-4.6-26	Not Significant
Valley freshwater marsh and ponds	Mitigation Measures SP-4.6-1–SP-4.6-26	Not Significant
Wetlands	Mitigation Measures SP-4.6-1–SP-4.6-26	Not Significant
High Country SMA (SEA 20)	Mitigation Measures SP-4.6-1–SP-4.6-26	Not Significant
River Corridor SMA (SEA 23)	Mitigation Measures SP-4.6-26a–SP-4.6-52	Not Significant

Table 4.5-2
Newhall Ranch Specific Plan Program EIR
Impacts to Biological Resources Caused by Implementation of the Specific Plan and WRP

Impact Description	Mitigation Measures	Conclusion After Mitigation
Indirect Impacts – Implementation of the Newhall Ranch Specific Plan has the potential to indirectly impact adjacent natural areas and special-status biological resources that occur proximate to the site. This would occur as a result of increased use of the Santa Clara River and upland areas by humans and domestic animals, increased use of adjacent natural areas by animals typical of an urban environment, and the potential effects of light, glare, sediment, and urban pollutant runoff, unless mitigated.	Mitigation Measures SP-4.6-18, SP-4.6-19, and SP-4.6-56	Significant
Cumulative Biological Impacts	None Proposed/Required	Significant

Notes:
[a] The vegetation classification system used for the Specific Plan and WRP environmental documentation was based on the Holland system (1986). The system used in this EIS/EIR is the "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003, updated in October 2007 (CDFG 2007D))
[b] It has since been confirmed that these taxa do not occur on the Newhall Ranch Specific Plan site.
[c] CDFG 2008 Special Animals list (CDFG 2008B) treats the former "California" horned lizard as the coast horned lizard and the former "San Diego" horned lizard as the coast horned lizard (*blainvillei* population). *P.c. blainvillei* and *P.c. frontale* are no longer treated by CDFG as separate subspecies.
Sources: Newhall Ranch Revised Draft EIR (County of Los Angeles 1999) and Newhall Ranch Revised Additional Analysis (County of Los Angeles 2003A).

4.5.1.3 Relationship of Proposed Project to VCC and Entrada Planning Areas

4.5.1.3.1 VCC Planning Area

The SCP component of the proposed Project, if approved, would facilitate development in the VCC planning area. The VCC is reliant on the SCP and associated take authorizations, and would not be developed without the take authorizations due to grading constraints. The VCC planning area is the remaining undeveloped portion of the VCC commercial/industrial complex currently under development by the applicant. The VCC was the subject of an EIR certified by Los Angeles County in April 1990 (SCH No. 1987-123005). The applicant recently has submitted to Los Angeles County the last tentative parcel map (TPM No. 18108) needed to complete build-out of the remaining undeveloped portion of the VCC planning area. The County will require preparation of an EIR in conjunction with the parcel map and related Project approvals; however, the County has not yet issued a Notice of Preparation (NOP) of the EIR or released the EIR. **Table 4.5-3** summarizes the approved acreages for the VCC planning area. **Table 4.5-4** summarizes the VCC's biological resources impacts, the applicable mitigation measures, and the significance findings after mitigation from the previously certified VCC EIR (April 1990).

Table 4.5-3
Acreage of Each Approved Land Use in VCC Planning Area

Approved Land Use	Acres
Open space	154
Commercial	73
Industrial	92
Public facilities	15
Total	**334**

Source: RMDP (Dudek 2008D).

Table 4.5-4
Impacts to Biological Resources Caused By VCC Implementation

VCC Impact Description	VCC Mitigation Measures	Finding After Mitigation
Project Impacts to Biological Resources: Development of the VCC Project would remove half of the existing vegetation on the site and up to 51 of 79 oak trees; Castaic Creek will be channelized, temporarily removing riparian habitat; during grading and construction, siltation of the downstream, protected habitat could occur.	Mitigation measures call for replacement and maintenance of oak trees; revegetating graded areas with drought tolerant, fire resistant native and non-native species; compliance with a section 404 Permit issued on December 11, 1990; installation of soft bottom channels; implementation of a vegetation restoration plan; observation of a qualified biologist during channel work; require industrial users to provide on-site containment systems; and parking lots required to contain storm drainage system.	Not significant
Cumulative Impacts to Biological Resources: No other filed development plans on adjoining parcels were pending. Other projects would be required to consult with CDFG and USFWS to ensure that suitable habitat for special-status species is maintained.	No further mitigation recommended.	Not significant

Source: VCC EIR (County of Los Angeles 1990).

4.5.1.3.2 Entrada Planning Area

The applicant is seeking approval from Los Angeles County for planned residential and nonresidential development within the Entrada planning area. The SCP component of the proposed Project would designate an area within Entrada as a spineflower preserve. If approved, the SCP component would include take authorization of spineflower populations in Entrada that

are located outside of the designated spineflower preserve area. Thus, the planned residential and nonresidential development within portions of the Entrada planning area is reliant on the SCP and associated take authorizations, and those portions would not be developed without the take authorizations. The applicant has submitted to Los Angeles County Entrada development applications, which cover the portion of the Entrada planning area facilitated by the SCP component of the proposed Project. However, as of this writing, the County has not yet issued an NOP of an EIR or released an EIR for Entrada. As a result, there is no underlying local environmental documentation for the Entrada planning area at this time. The acreages of the proposed Entrada land uses are listed in **Table 4.5-5**. It is projected that approximately 138 acres of land would be preserved as open space. The remaining 252 acres are proposed for residential, commercial, and public facility uses.

Table 4.5-5
Acreage of Each Projected Land Use in Entrada Planning Area

Projected Land Use	Acres
Open space	138
Residential	
Single-family	56
Multifamily	79
Commercial	46
Public facility	72
Total	**391**

Source: RMDP (Dudek 2008D).

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4.5.2 REGULATORY SETTING

As described above in **Section 2.3**, Requested Project Approvals, the applicant is requesting that the Corps issue a section 404 Permit under the federal Clean Water Act (33 U.S.C. §§ 1251–1387) and that CDFG issue a Master Streambed Alteration Agreement pursuant to Fish and Game Code section 1600 *et seq*., and two Incidental Take Permits under CESA issued by CDFG pursuant to Fish and Game Code section 2081, subdivisions (b) and (c). The requested Project approvals would facilitate the future development of the Specific Plan and portions of the Entrada and VCC planning areas. The requested Project approvals would also:

- Streamline the permitting process if there is a need for ongoing authorizations for individual projects or components through the issuance of a single section 404 Permit and a Master Streambed Alteration Agreement, rather than case-by-case permitting;
- Include in the permitting process mitigation requirements for listed and unlisted species, and incidental take authorizations for species currently listed under CESA;
- Standardize the mitigation applicable for Corps and CDFG regulated activities;
- Authorize all regulated activities to be carried out by parties other than the applicant, subject to the terms and conditions of the federal and state permits; and
- Authorize the Los Angeles County Department of Public Works (DPW) to carry out flood control maintenance activities, subject to the terms and conditions of the federal and state permits.

Although the Corps acknowledges the applicant's requested Project approvals as described above, it can only issue a section 404 Permit that: (1) authorizes activities that meet the requirements under the section 404(b)(1) guidelines and are not contrary to the public interest; (2) provides assurances that the authorized discharges into waters of the United States would be completed in accordance with the permit conditions and applicable laws and regulations; and (3) provides the Corps with the necessary flexibility and administrative remedies to address changed environmental conditions, modifications in laws and regulations, and compliance problems.

The Corps is also evaluating the RMDP component of the proposed Project for compliance with section 404(b)(1) guidelines. The Corps will use the results of the environmental impact analysis in this EIS/EIR and input from the public and commenting agencies in reaching a decision on whether to issue the section 404 Permit and, if so, what types of conditions are necessary. Thus, no decision has been made to issue a section 404 Permit for the RMDP component of the proposed Project at this time.

CDFG also acknowledges the applicant's requested Project approvals and its desire to obtain a Master Streambed Alteration Agreement, and the two Incidental Take Permits under CESA. CDFG would execute the requested master agreement and issue the requested permits provided they meet CDFG's requirements to protect and conserve fish and wildlife resources of the state under Fish and Game Code section 1600 *et seq*.; to protect and conserve threatened, endangered, and candidate species under CESA; to avoid take of fully protected species under Fish and Game Code sections 3511, 4700, 5050, and 5155; and to otherwise comply with CDFG's trustee obligations for fish and wildlife resources as provided in various provisions of the Fish and Game Code, including sections 1802, 3503, 3503.5, and 3513. Under CEQA, CDFG must avoid, or substantially reduce, to the extent feasible, all significant direct and indirect environmental impacts resulting from approval and implementation of the proposed Project.

4.5.2.1 Federal Authorities and Administering Agencies

4.5.2.1.1 Clean Water Act of 1976

4.5.2.1.1.1 *Section 404 Permit*

Section 404 of the Clean Water Act (CWA) authorizes the Secretary of the Army, acting through the Corps, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." CWA section 502 further defines "navigable waters" as "waters of the United States, including territorial seas." "Waters of the United States" are broadly defined in the Code of Federal Regulations, title 33, section 328.3, subdivision (a)1 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. Specifically, section 328.3(a) defines "waters of the United States" as follows:

1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2) All interstate waters, including interstate wetlands;
3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural

1 This regulation, 33 C.F.R., section 328.3, and the definitions contained therein, have been the subject of recent litigation. In addition, the U.S. Supreme Court has recently limited the scope and extent of the Corps' jurisdiction over "navigable waters" and "waters of the United States" under the CWA. See, *e.g.*, *Solid Waste Agency of Northern Cook Cty.* v. *U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) ("SWANCC"); *Rapanos* v. *United States*, 126 S.Ct. 2208 (2006). Despite the impact of these recent decisions, the definitions continue to provide guidance to the extent that they establish an outer limit for the extent of the Corps' jurisdiction over "waters of the United States," and, therefore, are referenced here for that purpose.

ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:

i. Which are or could be used by interstate or foreign travelers for recreational or other purposes;

ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

iii. Which are or could be used for industrial purpose by industries in interstate commerce;

4) All impoundments of waters otherwise defined as waters of the United States under the definition;

5) Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;

6) The territorial seas; and

7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of CWA, the final authority regarding CWA jurisdiction remains with the EPA.

The lateral limits of the Corps' section 404 jurisdiction in non-tidal waters are defined by the "ordinary high-water mark" (OHWM), unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or presence of debris (33 C.F.R. § 328.3, subd.(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of the Corps' jurisdiction will extend beyond the OHWM to the outer edge of the wetlands. The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 C.F.R. § 328.4; see also 51 FR 41217).

The CWA section 404(b)(1) Guidelines govern the issuance of permits authorizing the placement of fill material into waters of the United States, and state that (40 C.F.R. § 230.10, subd.(a)):

> … no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impacts on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

Under the section 404(b)(1) Guidelines, the applicant must demonstrate avoidance or minimization of impacts to waters of the United States to the maximum extent practicable. Under the above requirements, the Corps can only issue a section 404 Permit for the "least environmentally damaging practicable alternative" (LEDPA). In addition, the Corps is prohibited from issuing a permit that is contrary to the public interest (33 C.F.R. § 320.4).

Section 401 of the CWA requires an applicant requesting a federal permit (including a section 404 Permit) for an activity that may result in any discharge into navigable waters to provide state certification that the proposed activity will not violate state and federal water quality standards.

In addition to the above regulations on discharges of dredged or fill material into waters of the United States, CWA section 404 extends additional protection to certain rare and/or sensitive aquatic habitats. These are termed "special aquatic sites," and include six categories: sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle/pool complexes (40 C.F.R. § 230.40–45).

For proposed discharges into these special aquatic sites, the section 404(b)(1) Guidelines require consideration of whether the activity associated with the proposed discharge is dependent on access or proximity to or siting within a special aquatic site to fulfill its basic project purpose. If an activity is determined not to be water dependent, the section 404(b)(1) Guidelines establish the following two presumptions (40 C.F.R. § 230.10, subd.(a)(3)) that the applicant is required to rebut in addition to satisfying the alternatives analysis requirements:

- That practicable alternatives not involving discharges of fill material into special aquatic sites are presumed to be available; and,
- That all practicable alternatives to the proposed discharge not involving a discharge into a special aquatic site are presumed to have less adverse impacts on the aquatic ecosystem.

For nonwater-dependent projects, the applicant must rebut these presumptions in order to demonstrate compliance with the section 404(b)(1) Guidelines.

Of the six categories of special aquatic sites, only wetlands are at issue with respect to the proposed Project. The CWA defines wetlands as (33 C.F.R. § 328.3, subd. (b)):

> [T]hose areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances

do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The Corps has developed a field technique to identify wetlands, which is often referred to as the "three-parameter technique" (Corps 1987). This method involves a procedure to identify the three requisite characteristics of a section 404 jurisdictional wetland:

- Hydrophytic vegetation: more than 50% of dominant plants are adapted to anaerobic soil conditions;
- Hydric soils: soils classified as hydric or that exhibit characteristics of a reducing soil environment; and
- Wetland hydrology: inundation or soil saturation during at least 5% of the growing season (in southern California, this is equal to 18 days).

The Corps' wetlands delineation manual (Corps 1987) describes an approach to identify field indicators of the above characteristics. In general, all three characteristics must be evident by field indicators, and their presence must be determined independent of the other characteristics. Positive identification of wetlands based on the presence of fewer than three characteristics can only occur when one or more parameters is absent due to normal seasonal variation in environmental conditions ("Problem Areas"), or due to recent human activities ("Atypical Situations"). Delineation of wetlands using the Corps' 1987 manual requires a systematic field investigation of soil, plants, and hydrology using formal data forms.

4.5.2.1.1.2 *Corps' Section 404 Permit Process.*

The section 404 Permit process for the proposed Project began with the issuance of the Corps' Public Notice (announcing the receipt of a section 404 Permit application) and scoping meetings for the EIS/EIR. Based upon the information in this EIS/EIR, public comments, and input from various agencies, the Corps will conduct a permit evaluation considering the probable project and cumulative impacts of the proposed Project on the public interest. The decision will reflect the national concern for both protection and utilization of important aquatic resources and the applicable legal requirements. The benefit that may reasonably be expected to accrue from the proposed actions will be balanced against their reasonably foreseeable detriments.

In summary, the Corps will:

- Determine if the proposed actions are consistent with section 404(b)(1) Guidelines;
- Consult with the USFWS to determine if the proposed actions would adversely affect threatened and endangered species or their critical habitat under the provisions of Endangered Species Act section 7 (16 U.S.C. § 1531 *et seq.*);

- Coordinate with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service to ensure that the proposed actions would not affect southern steelhead or its critical habitat under the provisions of Endangered Species Act section 7 (16 U.S.C. § 1531 *et seq.*);
- Coordinate with the State Historic Preservation Officer to ensure compliance with National Historic Preservation Act section 106; and
- Consider all agency and public comments on the Public Notice and the EIS/EIR in the permit decision.

A section 404 Permit would not be valid until the applicant receives a section 401 water quality certification or waiver from the RWQCB. The water quality certification, denial, or waiver generally occurs concurrently with the Corps' permit decision. The Corps anticipates that any permit issued for the proposed actions would likely be a provisional permit until completion of the state process because the RWQCB cannot take action on a request for certification or waiver for the proposed section 404 Permit without compliance with CEQA (*i.e.*, certification of a Final EIR and adoption of CEQA findings by CDFG).

The permit process proposed by the Corps consists of two major steps: (1) an evaluation of the proposed Project followed by a decision; and (2) individual project verifications during the life of the permit. The key steps are as follows:

- Upon completion of the NEPA review, section 7 consultation, permit evaluation, and agency coordination, the Corps would issue a provisional permit, which would become an individual section 404 Permit after all regulatory authorizations are obtained, for the life of the Project.
- Upon CDFG's certification of the Final EIS/EIR and adoption of CEQA findings, the RWQCB would issue a waiver or section 401 water quality certification. The latter would become a condition of the Corps' section 404 Permit.
- The applicant would need to submit a request for verification of authorization to the Corps for each proposed project element described in the Final EIS/EIR. Project elements can only be implemented when the Corps has issued a written verification to the applicant.

  Project Modification. If the applicant modifies a project element significantly from that described in the Final EIS/EIR, a request to modify the section 404 Permit would be submitted to the Corps with an explanation for the modification and description of the following items: (1) new impacts associated with the modification and their significance; (2) changes in the overall environmental impacts due to the modification of an individual project element; and (3) conformance with the environmental protection elements of the

Final EIS/EIR and section 404 Permit conditions. Significant deviation from the Final EIS/EIR may also trigger the need for a Supplemental EIS/EIR if new significant or substantially more severe environmental impacts could occur.

Third-Party Use of Permit. Parties other than the applicant could seek authorization for section 404 activities that are included in the section 404 Permit by submitting a sub-notification letter to the Corps. The request must include a statement that the party will abide by the conditions of the section 404 Permit and any subsequent modifications to that permit.

Annual Reports. The applicant would be required to submit an Annual Permit Status Letter Report to the Corps by April 1 of each year. For this Project, the applicant has also proposed to submit an Annual Mitigation Status Report and Mitigation Accounting Form to the Corps and CDFG by April 1 of each year. Under the provisions of the section 404 Permit program (33 C.F.R. § 325.7), the Corps has the authority to reevaluate the circumstances and conditions of the section 404 Permit, and may initiate action to modify, suspend, or revoke the permit as may be made necessary by considerations of the public interest.

Maintenance. Prior to any maintenance activities, the DPW or other management entity would submit a Maintenance Notification to the Corps, CDFG, and the RWQCB. The Maintenance Notification would be submitted to the Corps 30 calendar days prior to the planned activities. The Corps would be required to respond within the 30-day period, notifying the DPW or other management entity that: (1) the maintenance activities can proceed as planned because they are consistent with the Final EIS/EIR and the conditions of the section 404 Permit; or (2) the activities cannot proceed as planned.

For maintenance activities that are not included in the section 404 Permit, the DPW would be required to submit a new permit modification application to the Corps. The Corps would have the discretion to modify the section 404 Permit and its conditions to include the new proposed projects, or to issue a separate nationwide or individual permit, as appropriate.

If the DPW or other management entity modifies a maintenance activity from the Final EIS/EIR, a request to modify the section 404 Permit would be submitted to the Corps with an explanation of the modification and descriptions of the following items: (1) new impacts associated with the modification; (2) changes in the overall environmental impacts due to the modification of an individual project; and (3) conformance with the environmental protection elements of the Final EIS/EIR and section 404 Permit conditions. The Corps would review the requested modifications, and would have the discretion to modify the section 404 Permit and its conditions to include the new

maintenance activity after review by the appropriate resource and regulatory agencies, or to issue a separate nationwide or individual permit, as appropriate.

4.5.2.1.1.3 *NEPA Action*

The Corps is the lead agency under NEPA guidelines responsible for review of the environmental impacts of the proposed Project. In that capacity, the Corps must assess, and is analyzing in this EIS/EIR, the potential for significant direct, indirect, and cumulative impacts on the environment that may result from approval and implementation of the proposed RMDP and SCP components of the proposed Project, and issuance of the requested section 404 Permit. The Corps' responsibilities include the evaluation of a range of reasonable alternatives to the proposed Project and the identification of feasible mitigation measures to minimize identified adverse effects of the proposed Project.

4.5.2.1.1.4 *Endangered Species Act of 1973*

The federal ESA (16 U.S.C. § 1531 *et seq*.) and the implementing regulations (50 C.F.R. § 17.1 *et seq*.) include provisions for the protection and management of federally listed threatened or endangered plants and animals and their designated critical habitats. Generally, the USFWS regulates upland and freshwater species and the NOAA Fisheries Service oversees provisions for protection of anadromous, marine, and estuarine species. ESA section 4 requires USFWS and/or NOAA Fisheries Service to make determinations on whether any species should be listed as an endangered or threatened species and to designate critical habitat for endangered and threatened species (16 U.S.C. § 1533). ESA section 3 defines critical habitat for endangered and threaten species as follows (16 U.S.C. § 1532):

(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of § 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) specific areas outside the geographic area occupied by the species at the time it is listed in accordance with the provisions of § 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species.

ESA section 4 also requires the preparation of recovery plans for the conservation and survival of an endangered or threatened species, unless such a plan would not promote the conservation of the species. Recovery plans include a description of site-specific management actions necessary to achieve the goal(s) for conservation and survival of the species; objective

measurable criteria which, if met, would result in a determination of removing the species from the endangered or threatened species list; and estimates of the time required and cost to carry out the measures needed to achieve the plan's goal(s) and to achieve the immediate steps to the goal(s) (16 U.S.C. § 1533).

ESA section 7 requires federal agencies to consult with USFWS and/or NOAA Fisheries Service and obtain a Biological Opinion prior to carrying out any federal program or agency action that may adversely affect threatened or endangered species. The section 7 consultation and Biological Opinion process includes an evaluation of whether a project is likely to jeopardize the continued existence of any endangered or threatened species or result in the "destruction or adverse modification" of critical habitat, and requires the inclusion of reasonable and prudent measures in the implementation of a project or agency action in order to minimize any impact (16 U.S.C. § 1536).

With regard to the proposed Project, the Corps would comply with these requirements through consultation with USFWS and NOAA Fisheries Service. In fact, in December 2007, the Corps initiated the required consultation, and requested the biological opinion of the USFWS on impacts to five federally listed species (least Bell's vireo, unarmored threespine stickleback, arroyo toad, southwestern willow flycatcher, and California condor). In addition, the Corps will confer with and request a biological opinion from USFWS regarding the proposed Project's impacts to two additional federally listed threatened species (California red-legged frog and coastal California gnatcatcher). This is because suitable habitat for the California red-legged frog exists within the Project area, because non-breeding (likely dispersing) California gnatcatchers have been observed on two occasions in the Project area, and because the two species are known to inhabit areas in the vicinity of the Project area. As a result, the potential exists for these two additional species to establish populations on site in the future and for the proposed Project to adversely affect these two species.

4.5.2.1.1.5 *USFWS Processes*

For federally listed species, the USFWS would review the Biological Assessment submitted by the Corps. Within 135 days, the USFWS will determine whether the project activities would jeopardize a federally listed species and issue either a Biological Opinion or Jeopardy Decision.

Should a new species become federally listed that is known to occur, or at least has moderate potential to occur, within the Project area, the applicant would coordinate with the Corps and the USFWS to determine whether surveys for that species are necessary. If the USFWS and the Corps determine that the Project activities would affect the newly-listed species, it is anticipated that the USFWS would amend the Biological Opinion.

In addition, the USFWS would review the applicant's proposed Candidate Conservation Agreement and associated SCP. Once the Candidate Conservation Agreement is deemed complete by the USFWS and upon completion of the Final EIS/EIR by the Corps, the SCP would be made a part of the Candidate Conservation Agreement signed by both the applicant and USFWS.

4.5.2.1.1.6 *NEPA Action*

The USFWS would utilize this EIS/EIR in evaluating whether to approve the requested Candidate Conservation Agreement, which will be made a part of the SCP component of the proposed Project. In that capacity, USFWS must assess the potential for significant direct, indirect, and cumulative impacts on the environment that may result from approval and implementation of the proposed Candidate Conservation Agreement. The USFWS would also consider the range of reasonable alternatives and feasible mitigation measures associated with the proposed Project.

Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. § 661 *et seq*.) provides authority for the USFWS to evaluate impacts to fish and wildlife from proposed water resource development projects. FWCA section 2 requires federal agencies to consult with the USFWS when the waters or channel of a stream or other body of water are proposed to be modified pursuant to a federal permit or license (16 U.S.C. § 662). Applicability depends on federal jurisdiction over some aspect of the Project, and the consultation is undertaken with a view toward conservation of wildlife resources by preventing loss of and damage to such resources. With regard to the proposed Project, the Corps will comply with these requirements in coordination with the USFWS.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (16 U.S.C. §§ 703–711) includes provisions for the protection of migratory birds, and prohibits the non-permitted take of most migratory birds, under the authority of the USFWS and CDFG.

Bald and Golden Eagle Protection Act. In addition to the provisions of the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act (16 U.S.C. § 668 *et seq*.) includes specific protection for bald eagles and golden eagles.

4.5.2.2 State Authorities and Administering Agencies

4.5.2.2.1 California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq*.).

The California Endangered Species Act (CESA) is intended to conserve, protect, restore, and enhance species designated as endangered or threatened, and their habitat. (Fish & G. Code, §

2052). The California Fish and Game Commission, a constitutionally established commission distinct from CDFG, has exclusive statutory authority under CESA to designate species as endangered or threatened under CESA. (Cal. Const., art. IV, § 20, subd. (b); Fish & G. Code, 2070). Animal species designated as endangered or threatened under CESA are listed in California Code of Regulations, title 14, section 670.5. Plant species designated as endangered or threatened under CESA, or designated as a rare plant species under the California Native Plant Protection Act (Fish & G. Code, § 1900 *et seq*.), are listed in California Code of Regulations, title 14, section 670.2.

CESA directs all state agencies, boards, and commissions to seek to conserve endangered and threatened species, and to utilize their authority in furtherance of that policy (Fish & G. Code, § 2055). For purposes of CESA, "conserve," "conserving," and "conservation" mean to use, and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the species protections provided by CESA are no longer necessary. These methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census, law enforcement, habitat acquisition, restoration and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking (Fish & G. Code, § 2061). CESA also emphasizes, consistent with its goal to conserve species, that it is policy of the State of California to acquire lands for habitat for endangered and threatened species (Fish & G. Code, § 2052). Finally, CESA emphasizes that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat that would prevent jeopardy (Fish & G. Code, § 2052.1).

With respect to lands in private ownership, CESA underscores that the cooperation of the owners of land identified as habitat for endangered or threatened species is essential for the conservation of those species and that it is the policy of the State of California to foster and encourage that cooperation in furtherance of CESA's conservation goals (Fish & G. Code, § 2056). To the extent that CESA requires a person to provide mitigation measures or alternatives to address a particular impact on a designated endangered, threatened, or candidate species, the Fish and Game Code provides that any required measures or alternatives shall be roughly proportional in extent to any impact on those species caused by that person. Likewise, where various measures or alternatives are available to meet this requirement, CESA directs that those measures or alternatives shall maintain the person's objectives to the greatest extent possible (Fish & G. Code, § 2052.1). To that same end, CESA directs CDFG to work with project proponents to develop reasonable and prudent alternatives, consistent with CESA's conservation goals, while at

the same time maintaining the project purpose to the greatest extent possible (Fish & G. Code, § 2053; see also Cal. Code Regs., tit. 14, § 783.2, subd. (b)).

Species designated as endangered or threatened under CESA, and species designated as candidates for listing or delisting under CESA, are subject to what is commonly known as CESA's "take" prohibition. In general, this prohibition provides that no person shall import into the State of California, or export out of the State of California, or take, possess, purchase, or sell within this state (or attempt to do any of those acts), any species, or any part or product thereof, designated by the Fish and Game Commission as protected under CESA, except as otherwise provided by law (Fish & G. Code, §§ 2080, 2085; see also Cal. Code Regs., tit. 14, § 670.2, subd. (i)(1)(B)1). "Take" is defined specifically in the Fish and Game Code to mean "hunt, pursue, catch, capture, or kill," or an attempt to do any such act, and violations of CESA's take prohibition are criminal misdemeanors under State of California law (Fish & G. Code, §§ 86, 12000; see also *Department of Fish and Game v. Anderson-Cottonwood Irrigation District* (1992) 8 Cal.App.4th 1554).

For purposes of CESA and the proposed Project, the applicant seeks two Incidental Take Permits pursuant to Fish and Game Code section 2081, subdivisions (b) and (c). The specific details regarding the two Incidental Take Permits requested by the applicant are discussed below in **Subsection 4.5.2.2.1.3**. With respect to Fish and Game Code section 2081, this provision provides, in pertinent part, that CDFG may authorize, by permit, the take of endangered, threatened, or candidate species if all of the following conditions are met (Fish & G. Code, § 2081, subds. (b), (c); see also Cal. Code Regs., tit. 14, § 783.4 subds. (a)–(c)):

(1) The authorized take is incidental to an otherwise lawful activity;

(2) The impacts of the authorized take are minimized and fully mitigated, which is defined to mean all impacts on the species that result from any act that would cause the proposed taking;

(3) The measures required to minimize and fully mitigate the impacts of the authorized take:

  (a) Are roughly proportional in extent to the impact of the take on the species;

  (b) Maintain the applicant's objectives to the greatest extent possible; and

  (c) Are capable of successful implementation, including new or other measures without an as yet established record of success, as long as there is a reasonable basis for utilization and a reasonable prospect for success;

(4) Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures; and

(5) Issuance of the permit will not jeopardize the continued existence of a state-listed species.

Recent case law provides important guidance regarding the issuance criteria for an Incidental Take Permit under Fish and Game Code section 2081, subdivision (b). In *Environmental Protection and Information Center v. California Dept. of Forestry and Fire Protection* (2008) 44 Cal.4th 459, for example, the California Supreme Court clarified with respect to an Incidental Take Permit issued pursuant to Fish and Game Code section 2081, subdivision (b), that "'take' in this context means to catch, capture or kill" (44 Cal.4th, p. 507, citing Fish & G. Code, § 86). Similarly, in *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018, the Third District Court of Appeal underscored that the issuance criteria necessarily involve a complex mix of quantitative and qualitative factors that CDFG must balance and gauge in the exercise of its independent judgment. Likewise, with respect to the requirement that the permittee minimize and fully mitigate all the impacts of the authorized take, the court rejected "any insinuation that the definition of 'take' under Fish and Game Code section 2081, subdivision (b)(2), encompasses the taking of habitat alone or the impacts of the taking. As section 86 of the Fish and Game Code makes clear, proscribed taking involves mortality (142 Cal.App.4th, p. 1040).

In short, the incidental take of listed species is authorized by CDFG on a discretionary basis. Typically, mitigation measures, including species and habitat avoidance, minimization, restoration or enhancement, acquisition, and permanent protection of compensatory habitat, along with monitoring and management and funding assurances, are necessary to demonstrate that project impacts are fully mitigated. Full mitigation for take of listed species is determined on a project-specific basis, and a variety of combinations of mitigation actions can form the basis for a conclusion that the impacts of the taking caused by any particular project are fully mitigated as required by CESA. Generally, though, full mitigation can be achieved by offsetting the project's incidental take of individuals of the covered species, along with the other spatial, temporal, direct, indirect, and cumulative impacts, including habitat loss, that constitute "impacts of the taking" as that term is used in CESA, such that the covered species continues to survive and thrive after completion of the project and required mitigation.

4.5.2.2.1.1 *Fish and Game Code Sections 1600–1616.*

Fish and Game Code section 1602 (Chapter 6, Fish and Wildlife Protection and Conservation) states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying CDFG of that activity. Thereafter, if CDFG determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFG a Streambed Alteration Agreement, which will include reasonable

measures necessary to protect the affected resource(s), before the entity may conduct the activity or activities described in the notification. (Fish & G. Code, § 1602).

Streambed Alteration Agreements are typically required for activities such as excavation or placement of fill within a stream channel, vegetation clearing, installation (and sometimes operation) of structures that divert the flow of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. "Steams," "rivers," and "lakes" are not defined in Fish and Game Code section 1600 *et seq*., and CDFG has not defined those terms in its regulations. However, generally speaking, CDFG would agree with the California Fish and Game Commission's definition of a stream or river in California Code of Regulations, title 14, section 1.72, as:

> [A] body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation.

Further, CDFG interprets "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. In the case of watercourses with vegetated floodplains, such as the Santa Clara River, this interpretation often results in an asserted jurisdictional area that is much wider than the active channel of the stream. The upstream limit of CDFG's asserted jurisdiction is the point upstream of which there is no evidence of a defined bed and bank, and riparian vegetation is not present.

It should be noted that the Corps' CWA section 404 jurisdiction is a subset of CDFG's Fish and Game Code section 1600 jurisdiction. That is, although the two may be coterminous, as is the case in many smaller, ephemeral streams lacking riparian plant communities, CDFG jurisdictional area will never be smaller than that defined using the Corps' "ordinary high-water mark" criterion.

Although Fish and Game Code section 1600 *et seq*. does not specifically contain provisions regulating activities that would impact wetlands, isolated areas containing riparian vegetation, or wetland hydrology, such activities are considered by CDFG to be subject to the Streambed Alteration Agreement program. However, there is no Fish and Game Code analogous to the "special aquatic site" concept found in the CWA.

4.5.2.2.1.2 *Master Streambed Alteration Process*

The development and issuance of a CDFG Master Streambed Alteration Agreement would follow the same general procedures described above for the section 404 Permit, including all

noticing and agency coordination requirements, and all project-specific and annual reports. However, there are several differences between the procedures, including timeframes for responding, terminology for correspondence, and forms to be used by the applicant and CDFG. A summary of CDFG's process is provided below.

The proposed Master Streambed Alteration Agreement would include avoidance, minimization and mitigation measures, all or some of which the applicant must implement for a specific covered activity, and maintenance procedures that the applicant must follow to complete a specific covered activity. The measures and procedures applied to a covered activity would be those that CDFG and the applicant agree are necessary to protect fish and wildlife resources that the activity could substantially adversely affect. The Master Streambed Alteration Agreement would be a long-term agreement (*i.e.*, greater than five years) authorized and governed by Fish and Game Code section 1605, subdivision (g).[2]

Prior to initiating a specific activity covered by the Master Streambed Alteration Agreement, the applicant would seek authorization from CDFG to begin the activity. The authorization request would be in writing, describe the activity, include construction plans when appropriate, and identify the avoidance, minimization, and mitigation measures and maintenance procedures identified in the Master Streambed Alteration Agreement that the applicant intends to apply to the activity.

Upon receipt of an authorization request, CDFG would first determine whether the activity is covered by the Master Streambed Alteration Agreement. If the activity is not covered, the applicant could request that CDFG amend the Master Streambed Alteration Agreement to include the activity after CDFG completes any necessary additional environmental review under CEQA (see below). If the activity is covered, the CDFG would determine whether the avoidance, minimization, and mitigation measures and maintenance procedures identified in the authorization request are necessary and adequate to protect the fish and wildlife resources that the activity could substantially adversely affect.

If the measures and procedures are necessary and adequate, CDFG would authorize the activity without additional environmental review under CEQA. If CDFG identifies a measure or procedure in the authorization request that is not necessary, CDFG would exclude that measure or procedure in its authorization. If CDFG determines that the measures and procedures identified in the authorization request are not adequate, CDFG would include additional measures that the applicant must apply to the activity described in the authorization request and complete any necessary additional environmental review under CEQA before authorizing the

[2] The applicant has submitted its application to the CDFG for the Master Streambed Alteration Agreement, and the proposed agreement. Please refer to **Appendix 2.0** for a copy of the proposed agreement.

activity. Any additional measures and/or procedures CDFG requires might or might not be identified in the Master Streambed Alteration Agreement. If the applicant disagrees with any of those additional measures, CDFG and the applicant would follow the process set forth in Fish and Game Code section 1605, subdivision (g)(3), to resolve the disagreement. If CDFG determines that individual projects and mitigation are not consistent, then CDFG would deny the authorization request.

Minor Amendment. The applicant may submit a request for a minor amendment to the Master Streambed Alteration Agreement for any project that has been denied under an authorization request, or for a project identified in the Final EIS/EIR that has been modified beyond the approved project limits. The request for an authorization for a minor amendment must be submitted with appropriate construction plans and mitigation information. If CDFG determines that the project would have no additional substantial adverse effects on fish and wildlife resources, CDFG would deem the mitigation information to be satisfactory under the Master Streambed Alteration Agreement, and approve the request for authorization of a minor amendment after completion of any required additional CEQA compliance. If CDFG determines that the project would have additional substantial adverse effects on fish and wildlife resources, CDFG would not deem the mitigation information satisfactory under the Master Streambed Alteration Agreement, and would deny the request for authorization of a minor amendment.

Major Amendment. If a request or authorization of a minor amendment is denied or if the applicant desires to go forward with a project that has not been identified in the Final EIS/EIR, the applicant may request a major amendment (Request for Amendment) to the Master Streambed Alteration Agreement, which would include appropriate construction plans and mitigation information. If the project identified in the request for a major amendment is consistent with the Final EIS/EIR and any substantial adverse effects to fish and wildlife can be mitigated to CDFG's satisfaction according to the Final EIS/EIR mitigation measures, CDFG could approve the request for a major amendment after completion of any additional required CEQA compliance. If the new project or project for which a request for authorization for variance was denied would impact areas not covered in the Final EIS/EIR, CDFG may require additional compensatory mitigation and any other necessary measures.

4.5.2.2.1.3 *CESA "Take" Authorizations.*

The proposed Project activities may affect some species listed as threatened or endangered under CESA. As described above in **Subsection 4.5.2.2.1,** CDFG may authorize the incidental take of these species under CESA through issuance of an Incidental Take Permit pursuant to Fish and Game Code section 2081, subdivisions (b) and (c). These provisions of the Fish and Game

Code, coupled with CDFG's "CESA Implementing Regulations" (Cal. Code Regs., tit. 14, § 783.0 *et seq.*), authorize CDFG to issue an Incidental Take Permit for a project as proposed if: (1) the take is incidental to an otherwise lawful activity; (2) the impacts of the taking are minimized and fully mitigated by measures that are roughly proportional to the project-related impact to the species and, where various measures are available, the measures maintain the applicant's objectives to the maximum extent possible; (3) the measures are capable of successful implementation; (4) the applicant ensures adequate funding to implement the measures, and for monitoring compliance with and effectiveness of those measures; and (5) the issuance of the permit would not jeopardize the continued existence of the species.

With respect to the proposed Project, the applicant has submitted applications to CDFG for issuance of two section 2081 Incidental Take Permits. The first application covers CESA-listed wildlife species observed in the Project area (western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher, and least Bell's vireo)), special-status wildlife species observed in the Project area (arroyo toad, tricolored blackbird (*Agelaius tricolor*), and western burrowing owl (*Athene cunicularia hypugaea*)), and undescribed plant and wildlife species observed in the Project area (sunflower (*Helianthus* sp. *nova*), everlasting (*Gnaphalium* sp. *nova*), and spring snail (*Pyrgulopsis* sp. *nova*)). If CDFG issues an Incidental Take Permit in response to this application, incidental take authorization would be granted for species that are listed at the time of permit issuance. All other species would be considered "unlisted covered species" in the permit. If, during the effective period of the permit, any unlisted covered species were subsequently listed under CESA, CDFG would give due consideration to the applicant's avoidance, minimization, and mitigation measures contained in the permit when evaluating a request to amend the permit to add the species to the take authorization provided by the permit. The second application covers the CESA-listed San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) only. The applicant submitted formal applications to CDFG for the requested Incidental Take Permits on May 9, 2008. (See generally Cal. Code Regs., tit. 14, §§ 783.2, 783.3, 783.5). These applications comprise part of Project-related documents being released by CDFG as part of the public review process required by both CEQA and CESA (see, *e.g.*, Cal. Code Regs., tit. 14, § 783.5, subd. (d)(2)).

4.5.2.2.1.4 *CEQA Actions*

CDFG is the lead agency under CEQA responsible for review of the environmental impacts of the proposed Project. In that capacity, CDFG must assess, and is analyzing in this EIS/EIR, the potential for significant direct and indirect impacts on the environment that may result from approval of the RMDP and SCP components of the proposed Project, and issuance of the Master Streambed Alteration Agreement and Incidental Take Permit(s). That analysis includes significant environmental impacts within CDFG's permitting authority, and impacts to other

natural resources within CDFG's jurisdiction as the state's trustee for fish and wildlife resources resulting from approval and implementation of the proposed Project. Where any such impacts are significant, CEQA's substantive mandate requires CDFG to avoid or substantially lessen those impacts to the extent feasible. In this respect, the EIS/EIR, RMDP, and SCP include feasible mitigation measures that would avoid or substantially lessen significant Project-related environmental impacts, including impacts on natural resources held in trust for the people of California.

Native Plant Protection Act of 1977. The Native Plant Protection Act of 1977 (Fish & G. Code, § 1900 *et seq*.) authorizes the California Fish and Game Commission to designate rare and endangered native plants, and provides specific protection measures for these listed species.

Public Resources Code 21083.4. This portion of CEQA provides for the conservation of oak woodlands through conservation easements and mitigation measures and includes certain exemptions. Specifically, the section requires that a county determine whether a project in its jurisdiction may result in a conversion of oak woodlands ("oak" is defined to apply only to those oak trees that are 5 inches or more in diameter at breast height [dbh]) that will have a significant effect on the environment. If the county determines that there may be a significant effect to oak woodlands, the county must require one or more of the following mitigation measures:

(1) Conserve oak woodlands, through the use of conservation easements;

(2) Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees. (There is a requirement to maintain planted trees for seven years after the trees are planted. And the planting of oak trees shall not fulfill more than one-half of the mitigation requirement for the project.);

(3) Contribute funds to the Oak Woodlands Conservation Fund; or

(4) Other mitigation measures developed by the county.

4.5.2.3 Other Permits and Approvals

In addition to the Corps, USFWS, and CDFG permitting requirements, other permits or approvals may be required to implement the proposed Project. Specifically, regulatory agencies, known as responsible agencies under CEQA, may identify the need for additional permits and approvals for the proposed Project. The other permits and approvals, which are known to be needed, or may be needed, are as follows:

- Specific Plan amendments, conditional use permits, tentative tract map approvals, zone changes, oak tree removal permits, and parking permits from Los Angeles County;

- Grading and building permits from Los Angeles County;
- Encroachment permits from Caltrans and Federal Highway Administration (FHWA) for bridge and roadwork involving Caltrans and FHWA facilities;
- Encroachment permits from Southern California Edison (SCE) for transmission line right-of-way access, and from DPW for channel and road work access;
- Individual NPDES permits for dewatering activities; and
- Stormwater mitigation plan approvals from Los Angeles RWQCB.

The above description of other required permits and approvals is not intended to provide a complete and final listing of future agency actions, permits, and approvals required to implement the proposed Project. Other additional permits/approvals may be required in the future.

4.5.2.3.1 County of Los Angeles Oak Tree Ordinance (CLAOTO)

The County of Los Angeles Oak Tree Ordinance (codified at Los Angeles County Code Chapter 22.56, Part 16) prohibits damaging or removing oak trees with trunks that are at least 8 inches in diameter (or that have two trunks totaling at least 12 inches in diameter) as measured 4.5 feet above natural ground (County of Los Angeles 1988). A heritage oak, as defined by CLAOTO, is any oak tree measuring 36 inches or more in diameter as measured 4.5 feet above natural ground, or any oak of 36 inches or less in diameter having a significant historical or cultural importance to the community. CLAOTO requires that all potential impacts to oak trees regulated by this ordinance be preceded by an application to the County that includes a detailed oak tree report. Mitigation for impacts to oak trees is usually required as a condition of an Oak Tree Permit issued by the County.

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4.5.3 ENVIRONMENTAL SETTING AND ALTERNATIVE 1

The RMDP is a conservation, mitigation, and permitting plan for the long-term management of special-status biological resources within the 11,999-acre Newhall Ranch Specific Plan (Specific Plan) area (County of Los Angeles 2003A). The RMDP would consist of development-related infrastructure improvements in or adjacent to the Santa Clara River and tributaries located in the RMDP study area that are needed to implement the approved Specific Plan. The RMDP infrastructure improvements are composed of various flood control features, bridges/road crossings, stream bank stabilization, drainage facilities, roads, building pads, utility corridors, pipeline and utility river crossings, nature trails, the discharge outfall for the previously approved Newhall Ranch Water Reclamation Plant (WRP), and drainage facility maintenance activities.

The 13,651-acre RMDP study area is located in the Santa Clara River Valley in unincorporated northwestern Los Angeles County and northeastern Ventura County (**Figure 4.5-1**, Regional Map, and **Figure 4.5-2**, Vicinity Map). The RMDP encompasses the same area as the boundary of the previously approved Newhall Ranch Specific Plan, except that it includes Specific Plan-related traffic/utility infrastructure and the Salt Creek area in Ventura County, adjacent to the Specific Plan. It lies west of Interstate 5 (I-5) and largely southwest of the junction of I-5 and State Route 126 (SR-126), with portions of the study area site located in San Martinez Grande and Chiquito canyons north of SR-126. Site elevations range from 825 feet above mean sea level (AMSL) in the Santa Clara River bottom at the Ventura County/Los Angeles County line to approximately 3,200 feet AMSL on the ridgeline of the Santa Susana Mountains along the southern boundary.

On a regional level, the City of Santa Clarita is located to the east of the Project area, and the Los Angeles County/Ventura County jurisdictional boundary line is to the west. This region and much of the proposed RMDP and SCP study areas is located in a broad ecological and biogeographic transition zone for the coastal and mountain ecoregions. This alluvial valley also provides access *via* the Santa Clara River to the edges of the Mojave Desert and the foothills of the San Gabriel Mountains. While much of the region has been subject to rapid urbanization and historical agricultural and oil development practices, large areas of open space and natural lands border the region. The Los Padres National Forest is located to the north of the Project area and the Angeles National Forest lies to the north and east. The Santa Susana Mountains; a region of gently rolling hills and sharp, steep walled canyons; border the Project area to the south.

The biological resources that occur in the RMDP and SCP study areas are adapted to a Mediterranean climate with cool, wet winters and hot, dry summers. Rainfall occurs primarily between October and March, with the heaviest rainfall occurring in mountainous regions in the Angeles and Los Padres National Forests. According to the Piru 2 ESE weather station in Los Angeles County, the mean annual rainfall for the region is 17.4 inches of rain per year (WRCC

2008); however, some sections of the planning area remain in the rain shadow of the Santa Susana Mountains and receive considerably less rainfall than areas north of the Santa Clara River.

The combination of unique geological, tectonic, and climatic conditions that are present in the Santa Clarita Valley create and maintain contact zones between coastal–desert subspecies and species pairs in the Specific Plan area that are of significant taxonomic and evolutionary value. For example, the San Fernando Valley spineflower—a state-listed species—has been documented to occur only within the RMDP and SCP study areas and at Ahmanson Ranch, which is situated at the headwaters of Las Virgenes Creek in Ventura County. Likewise, previously undescribed species of sunflower and snail have been located within a spring seep community at the mouth of Middle Canyon on a terrace along the Santa Clara River.

On a more local scale, the Santa Clara River and its floodplain are considered a regionally important habitat linkage, and the area supports numerous state- and federally listed species, including the least Bell's vireo and the unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*). Maintenance of habitat quality and wetland functions and services of the Santa Clara River and its floodplain are considered important for species utilizing this area. The RMDP and SCP study areas and the proposed open space designations and development areas are depicted on **Figure 4.5-3**, RMDP Study Area. The sensitive biological areas that occur within this study area include the Specific Plan's River Corridor SMA, High Country SMA, and Salt Creek area. Each of these specific resource areas is discussed in detail in **Subsection 4.5.3.3** (Existing Conditions by Project Planning Area).

The 333-acre VCC and 392-acre Entrada planning areas are not included in the RMDP. These planning areas have been included in the SCP (Dudek 2007E) to address the spineflower preserve areas within the applicant's land holdings in Los Angeles County (**Figure 4.5-4**, SCP Study Area). The SCP has been prepared to facilitate the conservation of San Fernando Valley spineflower on all of the applicant's land holdings that contain known spineflower populations.

Combined, the RMDP and SCP study areas constitute the Project area for purposes of the RMDP/SCP EIS/EIR. **Figure 4.5-5,** RMDP/SCP – Listed and California Fully Protected Wildlife Species Occurrences, **Figure 4.5-6,** RMDP/SCP – Special-Status Wildlife Species Occurrences, and **Figure 4.5-7**, RMDP/SCP – Special-Status Plant Species Occurrences, depict the Project area with point locations of special-status plants and animals (for animals, only those which are listed and/or fully protected are shown).

4.5.3.1 Summary of Literature Review and Biological Studies Conducted in Project Area

The purpose of Section 4.5, Biological Resources, is to document the existing biological resources that occur within the vicinity of the Project area (with special emphasis on special-status plants, wildlife species, and habitats, as well as habitat linkages ands wildlife corridors) and to analyze the effects of the proposed Project and identified alternatives on these biological resources. This documentation and analysis is based on a comprehensive literature review of existing biological information for the Project region and numerous biological studies that have been conducted in the Project area and immediate vicinity since 1988. Combined, these sources provide a substantial information base for the description of biological resources in the Project area and analysis of the impacts of the proposed Project and identified alternatives.

Information used to evaluate the potential occurrence of special-status plants and wildlife in the Project area was obtained from a number of sources, including a review of existing published and unpublished literature, personal communication with recognized experts, agency databases including CDFG 2007 California Natural Diversity Database (CNDDB) (CDFG 2007A), the California Native Plant Society (CNPS) online inventory (CNPS 2007), and the Federal Register.

Special-status biological resources present or potentially present in the Project area were identified through literature searches of the CNDDB (CDFG 2007A) and the CNPS online inventory (CNPS 2007). These searches included a review of all United States Geological Survey (USGS) 7.5-minute topographic maps that encompass portions of the RMDP/SCP boundary and all maps directly contacting these maps, as shown in Figure 4.5-8. USGS maps that encompass a portion of the RMDP/SCP boundary are the Val Verde, Newhall, Simi Valley East, and Oat Mountain quadrangles. USGS maps that border these four maps are the Cobblestone Mountain, Whitaker Peak, Green Valley, Piru, Mint Canyon, Simi Valley West, San Fernando, Thousand Oaks, Calabasas, Canoga Park, and Van Nuys quadrangles.

Additional background information regarding the potential occurrence of special-status species, as well as policies relating to special-status biological resources, was compiled from the following sources:

- A Flora of the Santa Barbara Region, California (Smith 1976);
- A Flora of the Santa Monica Mountains (Raven *et al.* 1986);
- Biology of the San Fernando Valley Spineflower, Ahmanson Ranch, Ventura County, California (Glenn Lukos Associates, Inc. and Sapphos Environmental, Inc. 2000);
- Biological Resource Assessment of the Proposed Santa Susana Mountains/Simi Hills Significant Ecological Area (PCR 2002);
- Biota Report, Newhall Ranch Specific Plan (RECON and Impact Sciences, Inc. 1996);

- CalFlora (CalFlora 2008);
- Checklist of Ventura County Rare Plants (Magney 2007);
- Herbarium specimens from Rancho Santa Ana Botanic Garden (RSA) and the University of California, Riverside (UCR) Herbarium;
- Inventory of Rare and Endangered Plants of California (CNPS 2001);
- List of "Threatened and Endangered Species and Species of Concern, Los Angeles County" (Los Angeles Almanac 2008);
- Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower (CDFG 2001);
- U.S. Fish and Wildlife Service (USFWS 1999C);
- Vascular Flora of the Liebre Mountains, Western Transverse Ranges, California (Boyd 1999);
- State and Federally Listed Endangered and Threatened Animals of California (CDFG 2008D);
- List of "Special Animals" (CDFG 2008C);
- List of "Special Vascular Plants, Bryophytes, and Lichens List" (CDFG 2007C).

General vegetation community information was obtained from Holland (1986), Sawyer and Keeler-Wolf (1995), and CDFG (2003; updated 2007). Plant species nomenclature follows Hickman (1993).

Information used in preparing this subsection was also compiled from more than 160 biological surveys completed in or adjacent to the Project area from 1988 to 2008 (**Table 4.5-6**). These biological surveys address a broad spectrum of biological resources, and they include 33 plant surveys (including four oak tree inventories), four vegetation mapping studies, two jurisdictional delineations of the wetlands and streambeds, 70 bird surveys, 25 amphibian and reptile surveys, 14 fish surveys, five butterfly surveys, one general insect study (associated with a spineflower pollinator study), two mammal surveys (including bats), and eight general biological resource surveys. Many of the studies listed in **Table 4.5-6** were focused surveys for special-status species; however, any special-status species that were not the focus of the survey were recorded if observed on site. These surveys represent a broad time span and were conducted for various projects in the Project vicinity. Many of the pre-2003 surveys were conducted in support of the Newhall Ranch Specific Plan EIR (County of Los Angeles 2003A), and most of the surveys since 2003 were conducted in support of this EIS/EIR, tentative tracts in the Specific Plan area (*e.g.*, Landmark Village), or the VCC and Entrada planning areas. The General Methods column in **Table 4.5-6** provides additional information for the specific areas and projects for which the surveys were conducted.

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
Plant Surveys	**FL*x***	May 5–27, 2001	Focused plant surveys were conducted at various locations throughout the Specific Plan area by FL*x* in 2001 and 2002. The 2004 surveys focused on the Santa Clara River corridor. 2004, 2005, and 2006 surveys focused on San Fernando Valley spineflower and slender mariposa lily at the Entrada site fireworks area, and 2006 surveys focused on the San Fernando Valley spineflower at the Potrero Irrigation Project site. In addition, vegetation types and plant species associations were noted and their dominant species recorded. The surveys were floristic in nature and were conducted according to accepted scientific protocol.	FL*x* 2002A, 2002B, 2002C,
		October 16–17, 2002		2004A, 2004B, 2005,
		April 14–27		2006A, 2006B
		May 31–June 3		
		June 15–17, and September 13–16, 2004		
		April 18–28, 2005		
		April 24 and May 5, 2006		
	Dudek	May–August 2002	Focused plant surveys were conducted in portions of the Specific Plan area, Salt Creek area, and the VCC and Entrada planning areas for special-status species. The surveys were floristic in nature and were conducted according to accepted scientific protocol. Survey methods varied slightly within the different study areas, but included focused surveys for the CNPS List 1 and 2 species and focused surveys for San Fernando Valley spineflower within areas identified by CDFG staff and in the remaining vegetation within the study areas.	Dudek and Associates 2002A, 2002B, 2002C,
		May–August 2003		2003, 2004A, 2004B, 2004C, 2004D, 2004E, 2004F, 2004G, 2004H, 2004I,
		April–July 2004		2006F, 2006G, 2006H, 2006I, 2006J, 2006K; Dudek 2007F, 2007G, 2007H
		May–July 2005		
		April–August 2006		
		May–July, 2007; ongoing		
Vegetation Community Surveys	**Dudek**	November and December 2005; July and August 2006	Biologists conducted vegetation community mapping throughout the Specific Plan and Salt Creek areas, and the VCC and Entrada planning areas. Vegetation community and land cover classifications used in these reports primarily follow the Vegetation Classification and Mapping Program "List of California Terrestrial Natural Communities Recognized by the California	Dudek and Associates 2006B, 2006C, 2006D, 2006E

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			Natural Diversity Database" (CDFG 2003).	
Oak Tree Surveys	**Impact Sciences, Land Design Consultants, Richard Johnson & Associates, Inc., Dudek**	2003–2006	Biologists conducted on-site surveys and evaluations of the oak trees pursuant to the County of Los Angeles Oak Tree Ordinance (CLAOTO) from 2003 through 2006. The Specific Plan area was covered on foot through areas where oak trees occur within the proposed Project development area (including a 200-foot buffer). Only oak trees subject to CLAOTO were mapped. Oak trees subject to CLAOTO were also mapped within the VCC and Entrada planning areas. Tree stands (tree groupings) outside of these areas, in undisturbed or preserved areas, were delineated on aerial images and evaluated in the field *via* a sampling protocol and later statistically analyzed for population estimates.	Impact Sciences 2006B, 2006C, 2006D County of Los Angeles 1999; Land Design Consultants 2007; RJA 2007; Dudek 2007D
Jurisdictional Delineation of Waters and Streambeds	**URS**	2003	The focus of the delineation was the Santa Clara River and its tributaries within the Specific Plan area. Published Corps/CDFG delineation protocols were utilized in the field.	URS 2003 (found in **Appendix 4.6**)
	Glenn Lukos Associates, Inc	2006	The focus of the delineation was the Santa Clara River and its tributaries within the Entrada planning area. Published Corps/CDFG delineation protocols were utilized in the field.	Glenn Lukos Associates, Inc 2006 (found in **Appendix 4.6**)
Invertebrates (Fairy Shrimp)	**Dudek**	December 2007 to March 2008	Wet season vernal pools surveys were conducted in five previously identified depressions associated with western spadefoot surveys in the Specific Plan area, three in Potrero Canyon (Crawford 2007), one between Lion Canyon and Grapevine Mesa, and one east of Lion Canyon (Compliance Biology 2006C). Two of the five depressions retained water in 2007/2008 and were surveyed for shrimp presence.	Dudek 2008E

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
Invertebrates (Butterflies)	**Compliance Biology, Guy Bruyea**	April and May 2004	The RMDP site and the Entrada planning area were surveyed to determine the presence or absence of San Emigdio blue butterfly, quino checkerspot butterfly, and their associated host plants. A general butterfly inventory was also conducted. Surveys were also conducted on Stevenson Ranch Phase V, adjacent to the Specific Plan area.	Compliance Biology 2004A, 2004B, 2004C, 2005
		April and May 2005	The Salt Creek Canyon Preservation area was surveyed to determine the presence or absence of San Emigdio blue butterfly, quino checkerspot butterfly, and their associated host plants. A general butterfly inventory was also conducted.	
	Dudek	June 2007	Biologists conducted a site visit to the Middle Canyon Spring as well as the lower reach of the Middle Canyon drainage to document the biotic conditions of the spring area, including the presence of the undescribed snail.	Dudek 2007C
Invertebrates (General Insects)	**Jones** *et al.* CSU, Fullerton	April and May 2004	An observational and sampling study of potential pollinators of the San Fernando Valley spineflower was conducted in areas occupied by the spineflower, resulting in a compilation of the insects occurring in these areas.	Jones *et al.* 2004
	RECON	March 15–May 10, 1999	Focused surveys for quino checkerspot butterfly and its associated habitat were conducted. The survey area included the Specific Plan Phase 1 development area (the northern portion of the Specific Plan area, including the Santa Clara River Valley, Homestead Canyon, Off-Haul Canyon, San Martinez Grande, Mid-Martinez Grande, and Chiquito Canyon).	RECON 1999C
Semi-Aquatic Amphibians and Reptiles; Fish	**RECON**	March 15–May 30, 1999	Surveys for arroyo toads were conducted along portions of the Santa Clara River and Castaic Creek within the Specific Plan and VCC planning areas using USFWS survey protocols.	RECON 1999A

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
	White and Leatherman BioServices	2000	Habitat assessment for arroyo toad habitat was conducted at Tesoro del Valle along the San Francisquito Creek, east of the Project area.	White and Leatherman BioServices 2000
	Ecological Sciences	April–June 2001	USFWS protocol surveys for arroyo toad were conducted along portions of the Santa Clara River, Castaic Creek, San Francisquito Creek, Santa Clara River South Fork, and Bouquet Creek within the Specific Plan and VCC planning areas.	Cameron 2001
		April–June 2005	USFWS protocol surveys for arroyo toad were conducted along portions of the Castaic Creek and San Francisquito Creek within the Specific Plan and VCC planning areas.	Ecological Sciences, Inc. 2005A, 2005B
		March–June 2003	USFWS protocol surveys for arroyo toad were conducted along portions of the Santa Clara River, Castaic Creek, Castaic Reservoir site, San Francisquito Creek, South Fork of the Santa Clara River, and Bouquet Creek within the Specific Plan and VCC planning areas.	Ecological Sciences, Inc. 2003A, 2003B, 2003C, 2003D, 2003E, 2003F
		March–June 2004	USFWS protocol surveys for arroyo toad were conducted along portions of the Santa Clara River and the South Fork of the Santa Clara River, and Castaic Creek within the Specific Plan and VCC planning areas.	Ecological Sciences, Inc. 2004A, 2004B, 2004C, 2004D
	Impact Sciences	April–June 2001	USFWS protocol surveys for arroyo toad were conducted in portions of the Santa Clara River and adjacent uplands from near the confluence of Castaic Creek, downstream to the Los Angeles County border, within the Specific Plan and VCC planning areas. Surveys were also conducted within the Natural River Management Plan area. Surveys for southwestern pond turtle and two-striped garter snake were conducted concurrently with the arroyo toad surveys.	Impact Sciences 2001

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
	Sandburg, Nancy	May 8–May 29, 2001	Focused surveys for arroyo toad and California red-legged frog east of the Project area, along the Santa Clara River from the River's End vacation park to the Transit Mix Concrete Company mine. These were not conducted using USFWS survey protocols.	Sandburg 2001
	BonTerra Consulting	2003	Surveys were conducted in 35 earth-bottom channels, including some channels in the Project area for unarmored threespine stickleback and Santa Ana sucker.	BonTerra Consulting 2003
	Compliance Biology	March 19–June 25, 2004	USFWS protocol surveys for arroyo toad were conducted in portions of the Santa Clara River and adjacent uplands near the confluence of Castaic Creek, downstream to the Los Angeles County border within the Specific Plan and VCC planning areas. Surveys for southwestern pond turtle and two-striped garter snake were conducted concurrently with the arroyo toad surveys.	Compliance Biology 2004D, 2004E, 2004F, 2006B, 2006C
		March 10 and March 23, 2004	Surveys for potential western spadefoot toad breeding habitat were conducted in the Mission Village area within the Specific Plan area during the known breeding season. Surveys consisted of habitat evaluations with a focus on the presence of temporary or seasonal rain pools. All flat lowland areas were surveyed for standing water, dirt roads were inspected for deep road ruts that may fill with rainwater, and temporary man-made retention basins were surveyed.	
		May 9 and May 23, 2004	Surveys for potential western spadefoot toad breeding habitat were conducted in the River Village project site and associated borrow sites (now referred to as Landmark Village). Surveys consisted of habitat evaluations with focus on the presence of temporary or seasonal rain pools. All flat lowland areas were surveyed for standing water, dirt roads were inspected	

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			for deep road ruts that may fill with rainwater, and temporary man-made retention basins were surveyed.	
		May 12, 2004	Surveys for potential western spadefoot toad breeding habitat were conducted in the West Creek area near Copperhill Drive and San Francisquito Creek. Surveys consisted of habitat evaluations with focus on the presence of temporary or seasonal rain pools. All flat lowland areas were surveyed for standing water, dirt roads were inspected for deep road ruts that may fill with rainwater, and temporary man-made retention basins were surveyed.	
		February–March 2006	Surveys for potential western spadefoot toad breeding habitat were conducted in the Castaic Mesa area upstream of the VCC planning area near Castaic Lagoon. Surveys consisted of habitat evaluations with focus on the presence of temporary or seasonal rain pools. All flat lowland areas were surveyed for standing water, dirt roads were inspected for deep road ruts that may fill with rainwater, and temporary man-made retention basins were surveyed.	
	ENTRIX	March 31, April 1, November 8, 10, 2004; February 1, 2005	Reconnaissance-level (non-USFWS protocol) field surveys were conducted, focusing on arroyo toad, California red-legged frog, southwestern pond turtle, and two-striped garter snake, and identifying habitat within portions of the Santa Clara River floodplain between Castaic Creek and Chiquito Canyon Creek within the Specific Plan area. Limited seining and dipnetting were also conducted.	ENTRIX 2006A, 2006B

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
	Peter H. Bloom	April-June 2007	USFWS protocols surveys for arroyo toad were conducted along approximately 8 miles of the Santa Clara River adjacent to the proposed Landmark Village project area. The survey area encompassed all habitats within the River channel and up to 700 meters from the River in some areas.	Bloom 2007
	San Marino Environmental Associates	May–September 1994	Surveys focused on trapping two-striped garter snake and southwestern pond turtle as part of the ARCO natural resource damage assessment.	SMEA 1994A, 1994B, 1995A
		May–July 1995	Surveys focused on documenting presence/absence and distribution of unarmored threespine stickleback, arroyo chub, Santa Ana sucker, arroyo toad, California red-legged frog, and western spadefoot toad. Surveys did not use the USFWS survey protocol. Surveys included the Santa Clara River between Castaic Creek confluence and Bouquet Canyon Road bridge within the Specific Plan, VCC, and Entrada planning areas.	
	Haglund and Baskin	June 3 and July 14, 2000	Focused surveys for unarmored threespine stickleback, arroyo chub, and Santa Ana sucker were conducted using a seine in the Santa Clara River at the I-5 Bridge.	Haglund and Baskin 2000
	Aquatic Consulting Services, Inc.	May–September 2000	Reconnaissance surveys were conducted along the Santa Clara River within the Specific Plan, Entrada, and VCC planning areas in the following areas: Castaic Junction, Commerce Center Bridge, west of Commerce Center Bridge to the Ventura County line, and Ventura County line to Las Brisas Bridge. Surveys focused on aquatic habitats with emphasis on state and federally listed species. In addition, other species of fish, amphibians, and reptiles were also surveyed.	Aquatic Consulting Services 2002A, 2002B, 2002C, 2002D

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
	Impact Sciences	March–June 2002	Focused surveys were conducted for unarmored threespine stickleback and other special-status fish species in the portion of the Santa Clara River from near its confluence with Castaic Creek, (east) upstream approximately 7.2 miles.	Impact Sciences 2003A, 2003B, 2003C, 2003D
		September 16 and 25, 2002	Focused surveys were conducted for unarmored threespine stickleback and other special-status fish species in the Natural River Management Plan area.	
		May 2003	Focused surveys were conducted for unarmored threespine stickleback and other special-status fish species in Castaic Mesa and Castaic Creek.	
	UCLA, Thomas Haglund, Ph.D.	1989	The report presents the results of a field and laboratory study on the occurrence of threespine stickleback in portions of the Santa Clara River on the Specific Plan site.	Haglund 1989
	ENTRIX	2004–2005	This report summarizes the focused assessment of fish presence, aquatic habitat quality and quantity, and potential project effects on threatened or endangered fish species inhabiting the Newhall Ranch reach of the Santa Clara River as well as tributary drainages to the Santa Clara River. This assessment covered the mainstem Santa Clara River from Salt Creek Canyon upstream to the Middle Canyon confluence and included the Salt Creek and Potrero Creek tributaries. Specifically, this report focused on potential impacts to the state and federally listed unarmored threespine stickleback and other fish species, including arroyo chub and Santa Ana sucker.	ENTRIX 2009
Terrestrial Reptiles	**Impact Sciences**	September–October 2004; August 2006	Pitfall trap lines were placed throughout the Specific Plan area in representative habitat types in September and October 2004 and August 2006. All pitfall traps were active (open) for five consecutive days and nights, and they were checked once per day (in the morning).	Impact Sciences 2006A

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			All captured animals were identified and released. For surveys for silvery legless lizard, 40 hours of hand raking were conducted in the late afternoons in October 2004 in areas with sandy or loose soil within suitable habitat (scrub, chaparral, sycamore, cottonwood, and oak communities).	
Birds	**Daniel Guthrie**	1988–2006; ongoing	Annual USFWS protocol surveys for least Bell's vireo and southwestern willow flycatcher were conducted along the Santa Clara River and Castaic Creek corridors within the Specific Plan, VCC, and Entrada planning areas.	Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000C, 2000E, 2000G, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2005C, 2006A, 2006B, 2006C
	BonTerra Consulting	2003	USFWS protocol surveys were conducted in 35 earth-bottom channels for least Bell's vireo and southwestern willow flycatcher.	BonTerra Consulting 2003
			The 1997 report is a follow up to the Labinger *et al.* 1996 survey and contains an additional section regarding the presence of other special-status species identified during the survey. The 1998 and 1999	

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			reports focused on least Bell's vireo monitoring, as well as documenting other avian species.	
			These surveys focused on impacts to the avian community and impacts to listed species, including monitoring of known least Bell's vireo population; other surveys were conducted for western yellow-billed cuckoo and southwestern willow flycatcher. Although this survey was a follow-up to the 1996 survey, the overall surveyed area was increased in order to understand the distribution of endangered species and subsequent restoration planning.	
	PCR	1998	USFWS protocol surveys for coastal California gnatcatcher surveys were conducted in upland habitats on the east and west sides of Castaic Creek (upstream of the VCC planning area).	PCR 1998
	Daniel Guthrie	2000 and 2004	USFWS protocol surveys for coastal California gnatcatcher as well as surveys for other upland birds were conducted in upland portions of the Specific Plan area.	Guthrie 2000A, 2000B, 2000D, 2000F, 2000H, 2004A, 2004B, 2004C, 2004D, 2004E, 2004G, 2004I
	Haglund and Baskin	April–July 2000	Surveys using USFWS survey protocol for least Bell's vireo and southwestern willow flycatcher were conducted along Santa Clara River at the I-5 Bridge.	Haglund and Baskin 2000
	Impact Sciences	May–June 2000	Six USFWS protocol surveys for coastal California gnatcatcher were conducted in a 156-acre portion of the Specific Plan site where California sagebrush scrub occurs.	Impact Sciences 2000
	Compliance Biology	2003	Six USFWS protocol surveys for coastal California gnatcatcher were conducted in a 2-acre area in Riverpark where California sagebrush scrub occurs,	Compliance Biology 2003A, 2003B

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			upstream of the Specific Plan site by Soledad Canyon.	
		2006	Six USFWS protocol surveys for coastal California gnatcatcher were conducted in an 80-acre area in Castaic Mesa where California sagebrush scrub occurs, upstream of the VCC planning area by Castaic Lagoon.	Compliance Biology 2006A
		2008	Six USFWS protocol surveys for coastal California gnatcatcher were conducted in the VCC planning area	Compliance Biology 2008
	SAIC	2003	Six USFWS protocol surveys for coastal California gnatcatcher were conducted on the Stevenson Ranch Phase V project site, adjacent to the Specific Plan area.	SAIC 2003
	Forde Biological Consultants	May–July 2006	USFWS protocol surveys for least Bell's vireo and southwestern willow flycatcher were conducted along Castaic Creek between Castaic Lagoon and Lake Hughes Road and Tapia Canyon Road (upstream of the VCC planning area).	Forde Biological Consultants 2006
	Bloom Biological, Inc.	February–May 2007; ongoing	Field surveys were conducted with an emphasis on finding active raptor nests (including owls) and locations of least Bell's vireos. Survey locations were along a 7-mile reach of the Santa Clara River and included the Landmark Village site, lower Salt Creek, Potrero Canyon, an unnamed canyon south of Wolcott Way, lower Castaic Creek, and lower Chiquito Canyon.	Bloom Biological 2007A
	Dudek	November 2007–February 2008	Field surveys were conducted to find special-status avian species, including raptors, with special emphasis placed on surveying abandoned agricultural fields for burrowing owls and oak woodlands for long-eared owls. Survey locations were along a 10-mile reach of the Santa Clara River and on Newhall Ranch property on both sides of SR-126 as well as in lower Salt Creek, Potrero Canyon and upland habitat.	Bloom Biological 2008
		November 2007 – June 2008	Field surveys were conducted for white-tailed kite along the Santa Clara River from Las Brisas Bridge in	Bloom Biological 2009

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			Ventura County to I-5 and on all lands within Newhall Ranch, including both sides of SR-126, lower Salt Creek, and Potrero Canyon. Upon detection, foraging and nesting individuals were observed for up to several hours if possible.	
		April –June 2007	Six USFWS protocol surveys for coastal California gnatcatcher were conducted in Landmark Village.	Priest 2007B; Lemons 2008
		July 2007–January 2008	Nine USFWS protocol surveys for coastal California gnatcatcher were conducted in Mission Village.	
	Impact Sciences	March–September 2004 July 2006	Field surveys were conducted to sample mammal species in dominant vegetation communities throughout the Specific Plan site during 2004. Survey locations were in representative dominant vegetation communities within the Specific Plan area. Five different survey methods were utilized: small mammal trapping, scent/track stations, spotlighting, cameras, and ANABAT bat detector recording.	Impact Sciences 2005; Johnson 2006
Mammals	**San Marino Environmental Associates**	August 7–10, 2006 (bats)	Additional bat surveys were conducted within the Project area to determine occurrence of, and habitat use by, bat species. Standard visual, acoustic, and mist-netting sampling methods were used to survey bats. Sampling was conducted near roosting sites and in potential foraging areas; acoustic devices and mist nests were deployed where bats were expected to fly low or in a somewhat defined air space; and visual surveys were conducted during the day and night at potential roost sites, and at dusk while observing bats in flight.	SMEA 1995B
		May 1993–September 1994	This report provides results of a number of surveys conducted to document the presence of rare plants and animals within approximately 80 square miles of the Santa Clarita water district service area, which includes a portion of Los Angeles County Sensitive Ecological Area (SEA) 23 (also known as the River Corridor	

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			SMA). This document contains lists of anticipated species and indicates the species actually found during the surveys.	
General Biological Surveys	**RECON and Impact Sciences**	1995	This report provides general biological resources information derived from surveys conducted on the Specific Plan area and its vicinity during the spring and summer months. These surveys included habitat, vegetation identification, percentages and mapping; avian surveys; river surveys that included documentation of fish, reptiles, and amphibian species; plant species documentation; butterfly surveys; and other wildlife surveys that included small mammal trapping methods.	RECON and Impact Sciences 1996
	Impact Sciences	Spring 1999	This habitat assessment report was created based on the results of vegetation surveys along the Santa Clara River on the portion of the Specific Plan site. Data were collected based on structure and composition of habitat and were used to assess the likelihood or potential for occurrence of special-status species that may occur on this portion of the river. In addition, during this study the potential for mitigation through habitat creation or enhancement of riparian habitat was also assessed.	RECON 1999B
		1996	This report provides results from a number of surveys conducted at four sites, two of which were located within the Specific Plan area. The focus of these surveys was to study the relation between upland habitat quality and use by riparian bird species and small mammals along the edge of the Santa Clara River in order to make habitat buffer recommendations.	Impact Sciences 1997
	Dudek	November and	Biologists conducted general wildlife surveys throughout the High Country SMA portion of the Specific Plan and Salt Creek areas in 2005 and within	Dudek and Associates 2006B, 2006C,

Table 4.5-6
Biological Surveys Conducted in the Project Area and Immediate Vicinity – 1988 to Present

Taxonomic Group/ Technical Report	Consultant	Survey Dates/ Season	General Methods	Survey References
			the VCC and Entrada planning areas in 2006.	2006D, 2006E
	Compliance Biology	December 2005 September 2006 2006	This report was conducted upstream of the VCC planning area in Castaic Mesa. The purpose was to assess the existing on-site biological conditions and the suitability of on-site habitats to support sensitive biological resources.	Compliance Biology 2006D

Information compiled from the literature review, field study observations listed in **Table 4.5-6**, and professional judgment were used to generate a list of special-status plant and wildlife species that were observed or have the potential to occur within the Project area, including Project construction zones and designated open space areas. For the purposes of the analysis presented in this subsection, special-status species are defined as plants or wildlife that:

- Have been designated as either rare, threatened, or endangered by CDFG or the USFWS and are protected under either the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.) or federal Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.);
- Are candidate species being considered or proposed for listing under these same acts;
- Are fully protected by the California Fish and Game Code sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies or local jurisdictions.

Table 4.5-7 includes those special-status plant species observed within the Project area, and **Table 4.5-8** includes those special-status plant species not likely to occur on site. **Table 4.5-9** includes those special-status wildlife species observed within the Project area, **Table 4.5-10** includes those special-status wildlife species potentially occurring on site, and **Table 4.5-11** includes those special-status wildlife species not expected to occur or rarely occurring on site.

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
Artemisia tridentata ssp. *parishii*	Parish's sagebrush	None/ None	None	N/A	big sagebrush scrub on the margins of drainage channels/ perennial shrub/ November–August	Parish's sagebrush was observed in the Salt Creek watershed and the Specific Plan area in 2006 (Dudek and Associates 2006B, 2006C). Plants were found primarily intermixed with big sagebrush. This species has not been observed within the VCC planning area (Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H). This species was not observed in the Entrada planning area (Dudek and Associates 2002B, 2004E, 2004H, 2006E, 2006G, 2006J; Dudek 2007G), but there is suitable big sagebrush scrub habitat on site. Co-occurs with *Artemisia tridentata* ssp. *tridentata*. Considered special-status by the County of Los Angeles.
Calochortus clavatus var. *gracilis*	slender mariposa lily	None/ None	1B	S1.1	chaparral and coastal sage scrub/perennial herb (geophyte)/ March–May	Slender mariposa lily was observed within the VCC area in 2004 and 2005 (Dudek and Associates 2004G, 2006H). Plants were found primarily on northwest- and southwest-facing ridges and slopes located just east of Hasley Canyon. Within the Entrada area, slender mariposa lily was recorded annually from 2003 to 2005 (Dudek and Associates 2004E, 2004H, 2006G) throughout the area, occurring primarily on south-facing slopes (70% of all individuals identified) and, to a lesser extent, on southeast-facing slopes (20% of all individuals identified). Slender mariposa lily was documented annually within the Specific Plan area from 2003 to 2006 (Dudek and Associates 2004C, 2004F, 2006F, 2006I), where it was found primarily on east-, northeast-, and southwest-facing ridges and slopes in the following areas: the San Martinez Grande

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
						Canyon, Chiquito Canyon, Off-Haul Canyon, Potrero Canyon, Long Canyon, Middle Canyon, Grapevine Mesa, and Airport Mesa areas as well as the lower Castaic Creek area. Slender mariposa lily was observed primarily in the northern portion and at the southwestern end of the Salt Creek area as well as along the southern end of the High Country SMA. Within the High Country SMA and Salt Creek area, slender mariposa lily was found primarily on east-, northeast-, and southwest-facing ridges and slopes. Observations were made within the High Country SMA and Salt Creek area from 2003 through 2006 (Dudek and Associates 2004F, 2004I, 2006B, 2006F). Slender mariposa lily was observed in the Entrada site fireworks area in 2004, 2005, and 2006 (FL*x* 2004B, 2005, 2006A). The estimated number of individuals in the study area ranged from 693 in 2006 to 65,297 in 2004. CNDDB records also exist for mouth of Pico Canyon.
Calochortus plummerae	Plummer's mariposa lily	None/ None	1B	S3.2	chaparral, coastal sage scrub, cismontane woodland, grasslands on rocky granitic substrate/perennial herb (geophyte)/ May–July	Three polygons and two point locations of Plummer's mariposa lily were mapped within the High Country SMA in 2006, with an estimated number of approximately 78 individuals (Dudek and Associates 2006B). Observed on steep southwest-facing slopes in the High Country SMA. No CNDDB records exist for the Project area quads or adjacent quads; however, records exist for the Santa Susana Mountains and Simi Hills.

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
Calochortus weedii var. *vestus*	late-flowered mariposa lily	None/ None	1B	S2.2	chaparral, cismontane and riparian woodland/ perennial herb (geophyte)/ June–August	Three polygons of late-flowered mariposa lily were mapped within the High Country SMA in 2003, with an estimated number of approximately 250 individuals (Dudek and Associates 2004I). Observed in chaparral and walnut woodlands at the head of the Salt Creek drainage on the crest of the Santa Susana Mountains. No CNDDB records exist for the Project area quads or adjacent quads.
Calystegia peirsonii	Peirson's morning-glory	None/ None	4	S3.2	chaparral, coastal sage scrub, cismontane woodland, grassland/ perennial herb/ May–June	Peirson's morning-glory was observed within the Entrada planning area in 2002, 2003, 2004, and 2005 (Dudek and Associates 2002B, 2004C, 2004E, 2004H, 2006G). This species was observed within the VCC planning area in 2003, 2004, 2005, and 2006 (Dudek and Associates 2004B, 2004G, 2006H, 2006K). Within the Specific Plan area, Peirson's morning-glory was recorded annually from 2002 to 2006 (Dudek 2002A, 2004C, 2004F, 2006F, 2006I; FL*x* 2002A). Observations of this species were made within the High Country SMA and Salt Creek area in 2003 and 2006 (Dudek and Associates 2004I, 2006B). This species is widespread on site and was observed on ridges and slopes, weakly climbing over chaparral, coastal scrub, and grasslands throughout the Specific Plan, VCC, and Entrada planning areas.
Cercocarpus betuloides var. *blancheae*	island mountain-mahogany	None/ None	4	S3.3	chaparral, closed-cone coniferous forest/evergreen shrub/February–May	Island mountain-mahogany was observed within the Entrada planning area in 2003, 2004, and 2005 (Dudek and Associates 2002B, 2004E, 2004H). Within the Specific Plan area, island mountain-mahogany was recorded annually from 2002 to

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
						2006 (Dudek and Associates 2002A, 2004C, 2004F, 2006F, 2006I). Observations of this species were made within the Salt Creek area in 2003 (Dudek and Associates 2004I). In all three areas, plants were found primarily in chaparral at the base of north-facing slopes. Occurrences of this species were not mapped due to its low sensitivity status (CNPS List 4.3). This species has not been observed within the VCC planning area (Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H).
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC/SE	1B	S1.1	coastal sage scrub, sandy soils/annual herb/April–June	In each year from 2002 through 2007, SFVS has been observed in four general areas within the Specific Plan area: Airport Mesa, Grapevine Mesa, Potrero Canyon, and San Martinez Grande Canyon (Dudek and Associates 2002A, 2004C, 2004F, 2006F, 2006I; Dudek 2007F). This species has also been observed from 2002 through 2007 in several areas at the Entrada planning area (Dudek and Associates 2002B, 2004E, 2004H, 2006G, 2006J; Dudek 2007G; FL*x* 2004B, 2005, 2006A), and on the western side of the VCC planning area, just east of Hasley Canyon (Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H). An estimated 760 to 7.4 million individuals were observed between the 2002-2007 growing seasons.
Gnaphalium sp. *nova*[a]	undescribed everlasting	None/ None	None	N/A	secondary alluvial benches/perennial herb/late summer	Within the VCC planning area, individuals were observed in 2004, 2005, and 2007 in the portion of Castaic Creek west of I-5 Bridge and east of Commerce Center Drive on secondary alluvial benches (Dudek and Associates 2004G, 2006H;

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
						Causey 2007). Two main populations and a number of smaller populations of this undescribed species were documented within the Specific Plan area during the 2003, 2004, 2005, and 2007 field seasons (Dudek and Associates 2004C, 2004F, 2006F; Causey 2007; FL*x* 2004B). These occurrences are primarily on secondary alluvial benches in the Santa Clara River near the mouth of Long Canyon and where Castaic Creek and the Santa Clara River converge, south of SR-126. This species was not observed at Entrada.
Helianthus sp. nova	undescribed sunflower	None/ None	None	N/A	seeps/perennial herb/ mid-summer	A population of 10 undescribed sunflowers was found in 2002 at Middle Canyon Spring on the south side of the Santa Clara River between Middle Canyon and San Jose Flats within the Specific Plan development area (Dudek and Associates 2002A).
Juglans californica	southern California black walnut	None/ None	4	S3.2	chaparral, cismontane woodland, coastal sage scrub, alluvial scrub/deciduous tree/March–May	Southern California black walnut was observed within the Entrada planning area in 2004 and 2005 (Dudek and Associates 2004H, 2006G). Within the Specific Plan area, southern California black walnut was recorded annually in 2002, 2003, and 2004 (Dudek and Associates 2002A, 2004C, 2004F; FL*x* 2004A). Observations of this species were made within the High Country SMA and Salt Creek area in 2003 and 2006 (Dudek and Associates 2004I, 2006B) and within the VCC planning area in 2004 and 2005 (Dudek and Associates 2004G and 2006H). Within the Specific Plan area, southern California black walnut dominates California walnut woodland and is found as an occasional component of chaparral,

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
						coastal scrub, and oak woodland (Dudek and Associates 2002A, 2004C, 2004F, 2004I, 2006B). Within the VCC planning area, an individual southern California black walnut occurs within southern cottonwood–willow riparian forest along the south side of Castaic Creek (Dudek and Associates 2004G and 2006H). Within the Entrada planning area, this species is found in chaparral, coastal scrub, and alluvial scrub (Dudek and Associates 2004H, 2006G).
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/ None	4	S3.2	coastal dunes, meadows, seeps, marshes, and swamps/perennial herb/May–June	Within the Specific Plan area, southwestern spiny rush individuals were observed annually from 2001 through 2006 (Dudek and Associates 2004C, 2004F, 2006F, 2006I; FL*x* 2002A, 2002B, 2004A). Southwestern spiny rush is known to occur in secondary channels of the floodplain of the Santa Clara River.
Navarretia ojaiensis	Ojai navarretia	None/ None	1B	N/A	grasslands and openings in California sagebrush scrub/annual herb/May–July	The Ojai navarretia species was located in surveys of the Salt Creek watershed (the majority of the High Country SMA and the Salt Creek area) conducted from April to July of 2003 (Dudek and Associates 2004I). Two main populations totaling approximately 60,000 individuals were found growing on clay lenses with a gentle to moderate north-facing slope.
Nemophila parviflora var. *quercifolia*	oak-leaved nemophila	None/ None	4	S3.3	cismontane woodland, lower montane coniferous forest/annual herb/May–June	In 2003 and 2004, one occurrence of oak-leaved nemophila was found along a northeast-facing slope in an oak woodland east of Grapevine Mesa within the Specific Plan area (Dudek and Associates 2004C, 2004F). This species has not been observed within the VCC planning area

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
						(Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H) or within the Entrada planning area (Dudek and Associates 2002B, 2004E, 2004H, 2006G, 2006J; Dudek 2007G).
Prunus ilicifolia ssp. *ilicifolia*	mainland (holly-leaf) cherry	None/ None	None	N/A	undifferentiated chaparral, big sagebrush scrub, and river wash/ perennial/March–May	Mainland cherry was observed within the Entrada planning area as an occasional component of undifferentiated chaparral, big sagebrush scrub, and river wash in 2003, 2004, 2005, and 2006 (Dudek and Associates 2004E, 2004H, 2006G, 2006J). Within the Specific Plan area, mainland cherry was recorded annually from 2001 through 2006 within undifferentiated chaparral, big sagebrush scrub, and river wash (Dudek and Associates 2002A, 2004C, 2004F, 2006F, 2006I; FL*x* 2002A). Observations of this species were made within VCC in 2003, 2004, 2005, and 2006 within undifferentiated chaparral, big sagebrush scrub, and river wash (Dudek and Associates 2004B, 2004G, 2006H, 2006K).
Quercus spp., including *Quercus agrifolia*, *Quercus berberidifolia*, *Quercus lobata*, *Quercus x. alvordiana*, and *Quercus*	oak trees including coast live oak, scrub oak, valley oak, Alvord oak, and interior live oak	None/ None	None	N/A	southern coast live oak riparian forest, coast live oak woodland, mixed oak woodland, valley oak/grass, and valley oak woodland /perennial shrub/tree/Spring	In total, 3,766 trees were inventoried and assessed within the development portion of the Specific Plan, VCC, and Entrada planning areas. The majority of these trees are native coast live oak trees, which are primarily associated with drainage bottoms, north-facing slopes, and along secondary drainages on non-north-facing slopes. Present at lower, but substantial, levels are valley oak trees are strongly associated with open grassland areas on gentler slopes and valley bottoms. Preserved trees outside the GPS inventory areas were estimated with sampling and regression analysis

Table 4.5-7
Special-Status Plant Species Observed within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Occurrence on Site
wislizeni						and total 156 trees in the River Corridor SMA (Impact Sciences 2006B, 2006C, 2006D; County of Los Angeles 1999; Land Design Consultants 2007; Richard Johnson & Associates 2007), 13,732 trees in the High Country SMA and 5,640 trees in the Salt Creek area (Dudek 2007K).

[a] Some experts identify this species as white-headed cudweed (*Gnaphalium leucocephalum*), which is a CNPS List 2.2 species (S3.2). See the analysis of the undescribed everlasting in **Subsection 4.5.5.3** for more detail.

Legend

FE:	Federally listed as endangered	CNPS List 1A:	Plants presumed extinct in California
FT:	Federally listed as threatened	CNPS List 1B:	Plants rare, threatened, or endangered in California and elsewhere
FC: Federal candidate for listing	**CNPS List 2:**	**Plants rare, threatened, or endangered in California but more common elsewhere**	
SC: State candidate for listing	**CNPS List 3:**	**Plants about which we need more information – a review list**	

California Heritage (CNDDB) Element Ranking

S1: Less than 6 Eos OR less than 1,000 individuals OR less than 2,000 acres
- S1.1 = very threatened
- S1.2 = threatened
- S1.3 = no current threats known.

S2: 6 to 20 Eos OR 1,000 to 3,000 individuals OR 2,000 to 10,000 acres
- S2.1 = very threatened
- S2.2 = threatened
- S2.3 = no current threats known.

S3: 21 to 80 Eos or 3,000 to 10,000 individuals OR 10,000 to 50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known.

S4: Apparently secure within California. This rank is clearly lower than S3, but factors exist to cause some concern; *i.e.*, there is some threat, or somewhat narrow habitat. NO THREAT RANK.

S5: Demonstrably secure to ineradicable in California. NO THREAT RANK.

Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a **bird's eye or aerial view** when ranking sensitive elements rather than simply counting element occurrences.
2. Uncertainty about the rank of an element is expressed in two major ways: First, by expressing the ranks as a **range** of values: *e.g.*, S2S3 means the rank is somewhere between S2 and S3. Second, by adding a "?" to the rank: *e.g.*, S2? This represents more certainty than S2S3, but less certainty than S2.

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Arenaria paludicola	marsh sandwort	FE/SE	1B	S1.1	dense freshwater marsh/perennial herb/May–August	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; nearest occurrence is in the Santa Ana River. Limited suitable habitat on site; very low likelihood of occurrence within the study area.
Astragalus brauntonii	Braunton's milk-vetch	FE/None	1B	S2.1	chaparral, coastal sage scrub, grasslands; often on carbonate substrates/perennial herb/March–July	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; nearest occurrence is in the Simi Hills. Suitable habitat exists on site. Moderate likelihood of occurrence within study area.
Atriplex coulteri	Coulter's saltbush	None/ None	1B	S2.2	coastal sage scrub and grasslands on alkaline or clay substrate/perennial herb/March–October	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; however, suitable habitat present on site. Moderate likelihood of occurrence within study area.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/ None	1B	S2?	coastal bluff scrub and coastal sage scrub on alkaline substrate/annual herb/May–October	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. *Atriplex serenana var. serenana* observed on site. Low likelihood of occurrence within the study area.
Baccharis malibuensis	Malibu baccharis	None/ None	1B	S1.1	chaparral, coastal sage scrub, cismontane woodland/deciduous shrub/August	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; closest known populations in the western Santa Monica Mountains near Malibu. Not expected to occur within the study area.

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Berberis nevinii	Nevin's barberry	FE/SE	1B	S2.2	chaparral, coastal sage scrub, riparian scrub, cismontane woodland on sandy or gravelly substrate/evergreen shrub/March–April	Not observed during the 2002 through 2007 field seasons. CNDDB records exist for San Francisquito Canyon at confluence with Santa Clara River; suitable habitat present on site. Moderate likelihood of occurrence within study area.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE	1B	S2.1	clay substrate openings in chaparral, sage scrub, and grasslands/perennial herb (geophyte)/ March–June	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; nearest occurrence is in San Dimas. Suitable habitat present on site. Low likelihood of occurrence within study area.
Calochortus clavatus var. *clavatus*	club-haired mariposa lily	None/ None	4	S3.3	chaparral and coastal sage scrub/perennial herb (geophyte)/ March–May	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for Newhall and Val Verde quads. Very low likelihood of occurrence in study area.
Calystegia sepium ssp. *binghamiae*	Santa Barbara morning-glory	None/ None	1A	SH	marshes and swamps/perennial herb/April–May	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; however, limited suitable habitat present on site. Low likelihood of occurrence within study area.
Centromadia [=*Hemizonia*] *parryi* ssp. *australis*	southern tarplant	None/ None	1B	S2.1	mesic edges of marshes in grasslands/annual herb/May–November	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; however, suitable habitat present on site. likelihood of occurrence within study area.Low
Deinandra [=*Hemizonia*] *minthornii*	Santa Susana tarplant	None/ SR	1B	S2.2	chaparral and coastal sage scrub on rocky substrate/deciduous shrub/July–November	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; however, records exist for the Simi Hills and Oat Mountain. Suitable habitat exists on site. Moderate likelihood of occurrence

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
						within study area.
Delphinium parryi ssp. *blochmaniae*	dune larkspur	None/ None	1B	S2.2	maritime chaparral, coastal dunes/perennial herb/April–may	Not observed during the 2002 through 2007 field seasons. No likelihood of occurrence.
Dodecahema leptoceras	slender-horned spineflower	FE/SE	1B	S1.1	Alluvial scrub on sandy substrate/annual herb/April–June	Not observed during the 2002 through 2007 field seasons. Historic CNDDB records exist for the Newhall or Val Verde quads in alluvial habitat similar to those present on site. Moderate likelihood of occurrence within Santa Clara River in study area.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/ None	1B	S2.1	clay openings in chaparral and coastal sage scrub, grasslands/perennial herb/April–June	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. Suitable habitat present on site. Low likelihood of occurrence within study area.
Dudleya cymosa ssp. *marcescens*	marcescent dudleya	FT/CR	1B	S2.2	chaparral, often on volcanic substrate/perennial herb (geophyte)/ April–June	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for Newhall and Val Verde quads. Low likelihood of occurrence within study area.
Dudleya cymosa ssp. *ovatifolia*	Santa Monica Mountains dudleya	FT/None	1B	S2.2	chaparral and coastal sage scrub, often on volcanic substrate/perennial herb (geophyte)/March–June	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for Newhall and Val Verde quads. Low likelihood of occurrence within study area.
Dudleya multicaulis	many-stemmed dudleya	None/ None	1B	S2.1	coastal bluff scrub, coastal sage scrub, valley and foothill grassland, rocky, often clay substrate/perennial herb/April–June	Not observed during the 2002 through 2005 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; closest known occurrences are in Calabasas and San Dimas. Suitable habitat exists on site. Low to moderate likelihood of occurrence within study area.

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Dudleya parva	Conejo dudleya	FT/None	1B	S2.1	coastal sage scrub and grassland on rocky, gravelly clays/perennial herb/May–June	Not observed during the 2002 through 2005 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. Suitable habitat exists on site. Low likelihood of occurrence within study area.
Erodium macrophyllum	round-leaved filaree	None/ None	2	SN/A	cismontane woodland and grasslands on clay substrate/annual herb/March–May	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; however, records exist for Simi Valley, and this plant was observed in the hills east of Castaic Lake in 2003. Suitable habitat present on site; moderate likelihood of occurrence in study area.
Horkelia cuneata var. *puberula*	mesa horkelia	None/ None	1B	S2.1	chaparral, cismontane woodland, coastal sage scrub on sandy or gravelly substrate/ perennial herb/February–December	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. Suitable habitat present on site. Low likelihood of occurrence within study area.
Malacothamnus davidsonii	Davidson's bush mallow	None/ None	1B	S1.1	chaparral, coastal sage scrub, riparian woodland/ deciduous scrub/June–January	Not observed during the 2002 through 2007 field seasons. Nearest occurrences are in San Fernando and Sunland. Suitable habitat present on site. Moderate likelihood of occurrence within study area.
Nama stenocarpum	mud nama	None/ None	2	S1S2	edges of lakes, rivers, ponds, vernal pools/annual/January–July	Not observed during the 2002 through 2007 field seasons. Moderate likelihood of occurrence on banks of Santa Clara River and other mesic areas on site. No CNDDB records exist for the Project area quads or adjacent quads. Limited suitable habitat present on site. Low likelihood of occurrence within study area.

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Nolina cismontane	chaparral nolina	None/ None	1B	S1.1	chaparral, coastal sage scrub on sandstone or gabbro substrate/perennial shrub April–July	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. Suitable habitat present on site. Low likelihood of occurrence within study area.
Opuntia basilaris var. *brachyclada*	short-joint beavertail	None/ None	1B	S1.2	chaparral, Joshua tree woodland, Mojavean desert scrub/succulent shrub/ April–June	Not observed during the 2002 through 2007 field seasons. This plant was identified as on site by Dudek and Associates in 2002; however, recent investigations indicate that the *Opuntia basilaris* plants on Newhall Ranch are not *O. basilaris* var. *brachyclada*, but are *O. basilaris* var. *ramosa*.
Pentachaeta lyonii	Lyon's pentachaeta	FE/SE	1B	S1.1	openings in chaparral and coastal sage scrub, grasslands/annual herb/March–August	Not observed during the 2002 through 2007 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; nearest occurrences are in the Simi Valley. Suitable habitat present on site. Moderate likelihood of occurrence within study area.
Rorippa gambelii	Gambel's watercress	FE/ST	1B	N/A	Marsh and swamps (freshwater and brackish)/perennial herb/April–September	Not observed during the 2002 through 2005 field seasons. No CNDDB records exist for the Project area quads or adjacent quads. Limited suitable habitat present on site. Very low likelihood of occurrence within study area.
Senecio aphanactis	rayless ragwort	None/ None	2	S1.2	chaparral, coastal sage scrub, cismontane woodland on alkaline substrate/annual herb/January–April	Not observed during the 2002 through 2005 field seasons. Historic CNDDB record for Saugus, south of Santa Clara River. Suitable habitat on site. Moderate likelihood of occurrence within study area.
Sidalcea neomexicana	salt spring checkerbloom	None/ None	2	S2S3	chaparral, coastal sage scrub, and playas on alkaline	Not observed during the 2002 through 2005 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; suitable habitat

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
					substrate/perennial herb/March–June	present on site. Moderate likelihood of occurrence within study area.
Thelypteris puberula var. *sonorensis*	Sonoran maiden fern	None/ None	2	S2.2?	meadows and seeps/perennial herb/ fertile January–September	Not observed during the 2002 through 2005 field seasons. No CNDDB records exist for the Project area quads or adjacent quads; nearest occurrence at Point Dume. Limited suitable habitat present on site. Low likelihood of occurrence within study area.

Legend

FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal candidate for listing
SC: State candidate for listing

CNPS List 1A: Plants presumed extinct in California
CNPS List 1B: Plants rare, threatened, or endangered in California and elsewhere
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California Heritage (CNDDB) Element Ranking

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S5: Demonstrably secure to ineradicable in California. NO THREAT RANK.

Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the

Table 4.5-8
Special-Status Plant Species Not Expected to Occur within the Project Area

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage (CNDDB) Element Ranking	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
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Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
			Insects (Butterflies)	
monarch butterfly (wintering sites) *Danaus plexippus*	—	***	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	Individual monarchs have been observed within the Newhall Ranch Specific Plan area (NRSP), including the High Country (Compliance Biology 2004A, 2005; Dudek and Associates 2006B) and Entrada (Compliance Biology 2004C); due to sites distance from coast, it is unlikely that the Project site would be used by large numbers of overwintering adults (Compliance Biology 2004A). Not expected to occur in Salt Creek area or VCC.
San Emigdio blue butterfly *Plebulina emigdionis*	—	***	Often near streambeds, washes, or alkaline areas. Associated with four-wing saltbush (*Atriplex canescens*) and quail brush (*Atriplex lentiformis*).	A colony was observed in Potrero Canyon in NRSP in association with *Atriplex lentiformis* plants (Compliance Biology 2004A and 2005). Suitable habitat occurs within Salt Creek, VCC, and Entrada.
			Mollusks	
undescribed species of Snail	—	—	Occupies groundwater-dependent spring, occurring on muddy and gravelly substrate and in water of depths up to several centimeters.	This species was observed on the project site in 2006 at the Middle Canyon Spring complex (Dudek 2007C).
			Fish	
Santa Ana sucker *Catostomus santaanae*	FT	CSC	Occupies small- to medium-sized perennial streams with water ranging in depth from a few centimeters to a meter or more.	This species is known to occur in the Santa Clara River and has been sparsely observed in the portion of the river within NRSP (CDFG 2007A; Impact Sciences 2003A), and within or adjacent to Entrada (SMEA 1995; Haglund and Baskin 2000; Impact Sciences 2003B). Population in the Santa Clara River system is not listed as threatened because it is introduced to the area. Not expected to occur in Salt Creek or VCC.
unarmored threespine stickleback *Gasterosteus aculeatus williamsoni*	FE	CE, CFP	Slow-moving and backwater areas.	This species is known to occur in the Santa Clara River and has been observed evenly distributed in the portion of the river within NRSP (Aquatic Consulting Services 2002B, 2002C; Impact Sciences 2003A, 2003B; ENTRIX 2005) and within Entrada (Aquatic Consulting Services 2002D;

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				SMEA 1995; Haglund and Baskin 2000; Impact Sciences 2003B). It was also observed in Castaic Creek (Haglund 1989).
arroyo chub *Gila orcutti*	—	CSC	Slow-moving or backwater sections of warm to cool streams with mud or sand substrates.	This species is known to occur in the Santa Clara River and has been observed abundantly in the portion of the river within NRSP (Aquatic Consulting Services 2002B, 2002C; Impact Sciences 2003A, 2003B; ENTRIX 2005), within Entrada (Aquatic Consulting Services 2002D; SMEA 1995; Haglund and Baskin 2000), and within VCC (Haglund 1989). Not expected to occur in Salt Creek.
			Amphibians	
arroyo toad *Bufo californicus*	FE	CSC	Restricted to rivers with shallow, gravely pools adjacent to sandy terraces that have a nearly complete closure of cottonwoods, oaks or willows, and almost no herbaceous cover. Requires shallow pools with minimal current, little to no emergent vegetation and a sand or pea gravel substrate overlain with flocculent silt for egg deposition.	Numerous focused surveys have been conducted for the arroyo toad throughout the Project site and along the Santa Clara River east of the Project site. Surveys include SMEA (1995); RECON (1999A); Aquatic Consulting Services (2002A, 2002B, 2002C, 2002D); Nancy Sandburg (2001); Impact Sciences (2001, 2002); Ecological Sciences (2003A, 2003B, 2003C, 2003D, 2003E, 2003F, 2004A, 2004B, 2004C, 2004D); Compliance Biology 2004D). Adult toads have been documented in limited numbers upstream of the Project area along the Santa Clara River and tributaries (Impact Sciences 2001; Sandburg 2001). One study (Aquatic Consulting Services 2002A) detected three arroyo toad tadpoles in the river within NRSP site, downstream of the Commerce Center Drive bridge site; and another study (Aquatic Consulting Services 2002D) detected three arroyo toad tadpoles, two near the Valencia Water Treatment Plant and one upstream of Commerce Center Drive.
western spadefoot toad *Spea hammondii*	—	CSC	Open areas in lowland grasslands, chaparral and pine–oak woodlands; requires temporary rain pools that last approximately three weeks.	Two pools were found with western spadefoot toad tadpoles, one near the western boundary of Mission Village and the other near Grapevine Mesa (Compliance Biology 2006C). Western spadefoot toad eggs and tadpoles were

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				observed in VCC in an area that has now been developed (Dave Crawford, Compliance Biology, pers. comm., 2007; Compliance Biology, Inc. 2004G). Upstream of the Commerce Center Bridge, one western spadefoot toad was observed in an isolated pool (Aquatic Consulting Services 2002A). Seasonal backwater areas within NRSP, as well as seasonal stock ponds and depressions within existing dirt roads, provide breeding habitat. Given documented occurrences of the species at several on-site locations, and the presence of suitable breeding habitat, the species could occupy additional suitable on-site habitats. Not expected to occur in Entrada.
			Reptiles	
silvery legless lizard *Anniella pulchra pulchra*	—	CSC	Stabilized dunes, beaches, dry washes, chaparral, scrubs, pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils.	This species has been observed within NRSP in 2004 (Impact Sciences 2006) in leaf litter of coast live oak woodland; suitable habitat occurs within Salt Creek, VCC, and Entrada in association with California sagebrush scrub, chaparral, oak woodland, and riverbank habitats.
coastal western whiptail *Aspidoscelis tigris stejnegeri*	—	***	Open areas in semiarid grasslands, scrublands, and woodlands.	Observed within NRSP in the High Country (Dudek and Associates 2006B) and one was observed off site in Castaic Mesa (Compliance Biology 2006D); suitable habitat occurs within Salt Creek, VCC and Entrada in association with grassland, scrub, oak woodland and riverbank habitats.
southwestern pond turtle *Actinemys marmorata pallida*	—	CSC	Streams, ponds, freshwater marshes, and lakes with growth of aquatic vegetation.	This species was observed in the reach of the Santa Clara River within NRSP (SMEA 1995; Aquatic Consulting Services 2002D; Impact Sciences 2002; Compliance Biology 2004D), within the Santa Clara River in Entrada (Impact Sciences 2001; Ecological Sciences 2004A; Dudek and Associates 2006E), and in Salt Creek (Dudek and Associates 2006B); river and riparian habitats within NRSP, Salt Creek, and VCC provide suitable habitat.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
coast horned lizard *Phrynosoma coronatum*	—	CSC	Exposed gravelly-sandy soils with minimal shrubs, riparian woodland clearings, dry chamise chaparral, and annual grasslands with scattered seepweed or saltbush.	This species was also observed during reptile surveys in 2004 and 2006 (Impact Sciences 2006). Suitable habitat occurs within NRSP, Salt Creek, VCC, and Entrada in association with scrub, chaparral, and riverbank habitats; species presumed to occur on site within suitable habitat.
two-striped garter snake *Thamnophis hammondii*	—	CSC	Perennial and intermittent streams with rocky or sandy beds and artificially-created aquatic habitats (manmade lakes and stock ponds); requires dense riparian vegetation.	This species was observed in the reach of the Santa Clara River within and adjacent to the NRSP (Aquatic Consulting Services 2002C; Impact Sciences 2002; Compliance Biology 2004), within Entrada (Impact Sciences 2001), and within VCC (Ecological Sciences 2003A); river and riparian habitats within Salt Creek, VCC, and Entrada provide suitable habitat.
Birds				
Cooper's hawk (nesting) *Accipiter cooperii*	—	WL	Dense stands of live oak, riparian woodlands, or other woodland habitats near water.	This species is known to be a year-round resident within the NRSP (Bloom Biological 2007A) and Entrada and VCC (Guthrie 2001A); it occurs commonly along the Santa Clara River and in Potrero Canyon (Bloom Biological 2008). This species has been observed nesting within NRSP near Grapevine Mesa and in Entrada north of the Santa Clara River (Guthrie 2000B; Bloom Biological 2007A, respectively), and with active territories in NRSP (Bloom Biological 2007A). It has observed over multiple years foraging within Salt Creek, VCC, and Entrada adjacent to the Santa Clara River during annual bird surveys. The Project site provides foraging and nesting habitat for the species.
sharp-shinned hawk (nesting) *Accipiter striatus*	—	WL	Nests in woodlands and forages over dense chaparral and scrublands.	This species has been observed within the NRSP hunting along agriculture fields along the Santa Clara River (Bloom Biological 2008) and was observed by Guthrie in the NRSP (Guthrie 1997B, 1999C) and Entrada (Guthrie 2002A). It was also observed east of the site along the Santa Clara River (Guthrie 1995A) and one individual was observed in Salt Creek (Bloom Biological 2008). All

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				observations were thought to be migrants and/or wintering birds. The Project site is outside the known breeding range for this species. This species forages in woodlands, chaparral, scrublands, and edge/ecotone areas between habitats which occur throughout the Project site.
tricolored blackbird (nesting colony) *Agelaius tricolor*	BCC, USBC	CSC	Freshwater marshes and riparian scrub (nesting). Grassland and agriculture (foraging).	This species has been observed on the Project site during focused bird surveys. A flock of approximately 200 breeding pairs of tricolored blackbirds was observed in Castaic Junction (Guthrie 1994A). Another flock of approximately 20 breeding pairs of tricolored blackbirds was observed next to Castaic Creek (Guthrie 1994A). In 1995 (Guthrie 1995A) and 1996 (Guthrie 1996A) small flocks visited the Castaic Creek site again in April and May, but did not breed there. Labinger *et al.* (1995) observed a small nesting colony within the Project site (specific location is not known). Migrants have also been observed within the RMDP (Guthrie 1996B, 1999B), VCC (Guthrie 1999A, 2006E) and Entrada (Guthrie 2000E, 2001A, 2006A; Dudek and Associates 2006E) boundaries during surveys, but no breeding colonies have been observed since 1994, despite annual surveys through 2007. A flock of 20 tricolored blackbirds was observed in Potrero Canyon in 1994 (Guthrie 1994), and a flock of 50 birds was seen on the Newhall Ranch property north of Mayo Crossing (County of Los Angeles 2003A).
southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	—	WL	Coastal scrub.	This species has been observed over multiple years as a fairly common resident within the Coastal scrub within NRSP, Salt Creek, VCC, and Entrada during annual bird surveys and has been observed foraging in upland scrub on the south side of the Santa Clara River, and in upland areas (Bloom Biological 2008), and near the Santa Clara River (Guthrie 2000A, 2000B, 2001A, 2002C, 2004A, 2004D), and nesting in 2007 (Bloom Biological 2007A); the Project

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				site provides suitable nesting and foraging habitat with large concentrations of coastal scrub in the northeastern portion of NRSP and southeastern portion of High Country.
golden eagle (nesting and wintering) *Aquila chrysaetos*	BCC	WL CFP	Nests on cliff-walled canyons and large trees in open areas. Forage in open shrublands, agriculture, and grassland.	One pair was seen frequently in upper Potrero Canyon and a juvenile was seen once in the same area; this is likely a resident pair, but no nests have been observed to date (Bloom Biological 2008). An individual was observed over the Santa Clara River corridor in Castaic Junction area in 1993 and 1995 (Guthrie 1993A, 1993B, 1995) and another was flushed in a woodland west of Grapevine Mesa in the NRSP in 2000 (Guthrie 2000B); no nesting eagles have been observed on the Project site but suitable nesting and foraging habitat is present within NRSP, Salt Creek, VCC, and Entrada. These species have also been observed along Santa Clara River east and west of the project site (Guthrie 1993A, 1997A, 2004F, 2006A; Labinger *et al*. 1997A).
short-eared owl (nesting) *Asio flammeus*	USBC	CSC	Grassland, prairies, dunes, meadows, irrigated lands, saline and freshwater emergent wetlands.	This species was observed in the Salt Creek area just west of the Ventura/Los Angeles County line in the fall of 2005 (Dudek and Associates 2006B). A freshly dead individual was found at the edge of a cultivated field just west of I-5 during the Santa Clarita Bird Count in December 2006 (Olson 2007). This species is likely a winter visitor and is not known to nest in the Project vicinity.
long-eared owl (nesting) *Asio otus*	—	CSC	Dense, riparian and live oak thickets near meadow edges, nearby woodland and forest habitats. Also found in dense conifer stands at higher elevations. Forages in grassland and agriculture.	This species was observed within NRSP near Via Canyon in Fall 2005 (Dudek and Associates 2006B). Some suitable nesting habitat is present along the Santa Clara River and Castaic Creek, and foraging habitat is present throughout the NRSP, Salt Creek, VCC, and Entrada.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
western burrowing owl (burrow sites) *Athene cunicularia*	BCC	CSC	Grasslands, open scrub, and agriculture, particularly with ground squirrel burrows.	A single individual was observed within NRSP (Babcock 2007). Given the timing of the sighting (winter 2006), the observed individual may have been wintering on site or temporarily using the site during migration. Another individual was observed in December 2006 and on April 11, 2007 (Miller 2007). NRSP, Salt Creek, VCC, and Entrada provide suitable foraging and nesting habitat for the species; California ground squirrel burrows occur on the Project site.
oak titmouse (nesting) *Baeolophus inornatus*	USBC	***	Montane hardwood-conifer, montane hardwood, blue oak, valley oak and coastal oak woodlands, montane and valley foothill riparian habitats.	This species is a common resident and nests on site in cottonwood riparian and coast live oak communities; it has been observed over multiple years in the NRSP, Entrada and VCC sites. Recent observations have been in 2006 (Guthrie 2006C) and 2007 and 2008 (Bloom Biological 2007A, 2008).
ferruginous hawk (wintering) *Buteo regalis*	BCC	WL	Grasslands, agricultural fields, and open scrublands.	This species is an infrequent seasonal migrant. Individuals of this species were observed almost every day in east alfalfa fields, Wolcott fields, and Potrero Canyon, and other agriculture fields along the Santa Clara River in winter 2008 (Bloom Biological 2008). Although suitable foraging habitat is present on the Project site, this species has not been documented to nest in California and is expected to forage on the site.
Costa's hummingbird (nesting) *Calypte costae*	USBC	***	Shrubs and arid habitats. Edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent scrub, arid shrublands, lower elevation chaparral, and palm oasis.	This species has been observed over multiple years within the NRSP, Entrada and VCC sites; it is thought to be a summer resident, although does not appear to be an abundant species within the Project site based on the number of sightings each year. Recent observations have been in 2006 (Guthrie 2006C).
Lawrence's goldfinch *Carduelis lawrencei*	BCC, USBC	***	Valley foothill hardwood, valley foothill hardwood-conifer; and, in southern California, desert riparian, palm oasis, pinyon-juniper and lower montane habitats.	This species has been observed as a resident in the coastal scrub in the northern and northeaster portions of the Project site, and has been observed within the riparian habitats of the Santa Clara River over multiple years within NRSP and

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				Entrada during annual bird surveys. Recent observations have been in 2006 (Guthrie 2006C) and 2007 and 2008 (Bloom Biological 2007A, 2008). Suitable nesting and foraging habitat is present within NRSP, Salt Creek, VCC, and Entrada.
turkey vulture *Cathartes aura*	—	†	Rangeland, agriculture, grassland; uses cliffs and large trees for roosting, nesting and resting.	This species has been observed over multiple years within NRSP, Salt Creek, VCC, and Entrada; recent observations in the Project site have been made in 2006 (Guthrie 2006C; Bloom Biological 2007A); nesting opportunities are also present within the Project site.
northern harrier (nesting) *Circus cyaneus*	—	CSC	Coastal salt marsh, freshwater marsh, grasslands, and agricultural fields.	This species has been observed within NRSP in 1999 and 2000 (Guthrie 1999B, 2000A) and in 2007 and 2008 near the Santa Clara River in the NRSP and Entrada sites (Bloom Biological 2007A, 2008). This species has also been observed within the vicinity of the project site (Compliance Biology 2003, 2006); suitable foraging and nesting habitat is present within NRSP, Salt Creek, VCC, and Entrada.
western yellow-billed cuckoo (nesting) *Coccyzus americanus occidentalis*	FC BCC	CE	Nests along the broad, lower flood-bottoms of larger river systems. Also nests in riparian forests and riparian jungles of willow often mixed with cottonwoods, with an understory of blackberry, nettles, or wild grape.	One individual was heard at the Magic Mountain (Entrada) area in 1997 and thought to be a migrant (Labinger *et al.* 1997B). Single individuals (thought to be migrants) were observed along the Santa Clara River east of the Project site in 1997 and 1998 (Guthrie 1997A; Labinger and Greaves 1999A), and west of the Ventura county line (Guthrie 1997B); none have been observed since then; species has not been observed nesting on site; suitable nesting and foraging habitat present within NRSP, VCC and Entrada. This species has been observed historically in 1979, 1981 and 1992 (Labinger *et al.* 1997A).
hermit warbler (nesting) *Dendroica occidentalis*	—	***	Breeds in mature ponderosa pine, montane hardwood-conifer, mixed conifer, Douglas fir, redwood, red fir and Jeffrey pines. Uses live oak woodlands and deciduous trees	Individuals of this species have been observed within or adjacent to the Specific Plan in 1994, 1996, and 2002 (Guthrie 1994B, 1996B, 2002C). All observations were thought to be migrants. The Project site is within this

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
			during migration, and valley foothill hardwood in winter.	species winter range. Suitable habitat for migration and wintering habitat occurs on site, but no suitable nesting occurs on site.
yellow warbler (nesting) *Dendroica petechia brewsteri*	—	CSC	Riparian thickets and woodlands.	This species has been observed over multiple years during annual bird surveys and nests in the riparian areas within NRSP, Salt Creek, VCC, and Entrada. These species have been observed both during nesting season and migration. Recent observations of these species within the Project site in 2006 (Guthrie 2006A, 2006B, 2006C) and 2007 (Bloom Biological, Inc. 2007A).
white-tailed kite (nesting) *Elanus leucurus*	—	CFP	Inhabits herbaceous and open stages of most habitats, common in cismontane in California. Nests are placed near top of dense oak, willow or other tree stand; usually 6 to 20 meters (20 to 100 feet) above ground. Nest located near open foraging area.	This species has been observed successfully nesting on site and in the vicinity of the project site along the Santa Clara River over multiple years within NRSP, Salt Creek, VCC, and Entrada during annual bird surveys (Guthrie 1994A, 1995A, 1997A, 1998B, 2000E, 2000F, 2006B) and during focused survey (Bloom Biological 2007A, 2009); suitable foraging and nesting habitat is present on the Project site.
willow flycatcher (nesting) *Empidonax traillii*	USBC	CE	Riparian woodlands that contain water and low willow thickets.	This species has been observed along the Santa Clara River over multiple years within the NRSP, Entrada and VCC project sites. The observations have usually been of individual species, thought to be migrants passing through the area based on their behavior and time of year (no observations occurred after June 22). Recent observations along the Santa Clara River within the NRSP, Entrada, and VCC have been made in 2005 and 2006 (Guthrie 2005B, 2006B). These species have also been observed adjacent to the project site. No nesting has been observed.
southwestern willow flycatcher (nesting) *Empidonax traillii extimus*	FE, USBC	CE	Riparian woodlands that contain water and low willow thickets.	Most of the observations of the willow flycatcher have not identified individuals to the subspecies level. Individuals were considered to be migrating through the site as they were not located after June 22. Within the vicinity of the project site, two individuals identified as southwestern willow flycatchers were observed in Castaic Creek in 2006

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				(Forde Biological Consultants 2006). These individuals, however, were not displaying any nesting behavior. Suitable nesting and foraging habitat is present within NRSP, VCC, and Entrada. The most recent observation of this subspecies displaying territorial behavior is downstream approximately 18 miles, near Saticoy (Labinger and Greaves 1999A).
California horned lark *Eremophila alpestris actia*	—	WL	Grasslands, disturbed areas, agriculture fields, and beach areas.	This species has been observed within NRSP, Entrada, and VCC during annual bird surveys foraging in plowed and graded fields near the Santa Clara River and Castaic Creek over multiple years. In winter 2008 flocks of 250-500 individuals were observed in the Wolcott agriculture fields and east alfalfa field on several occasions (Bloom Biological 2008), and was observed in agriculture fields in 2007 (Bloom Biological 2007A); this species is thought to be a resident with recent observations (Guthrie 2000A, 2000C, 2001A, 2005B, 2006C); no nesting has been observed, but suitable foraging and nesting habitat is present on the Project site.
merlin (wintering) *Falco columbarius*	—	WL	Coastlines, wetlands, woodlands, agricultural fields, and grasslands.	Several individuals observed on different occasions hunting over agriculture fields along the Santa Clara River and in Potrero Canyon (Bloom Biological 2008). A male and female were observed flying over agriculture fields bordering riparian habitat near Indian Dunes in the NRSP in March 2007 (Bloom Biological 2007A). Although this species does not nest in California, CDFG considers wintering birds to be of Special Concern.
prairie falcon (nesting) *Falco mexicanus*	BCC	WL	Grasslands, savannas, rangeland, agricultural fields, and desert scrub; requires sheltered cliff faces for shelter and nesting.	At least 2 individuals were observed on several occasions in Potrero Canyon; and two other individuals were observed along the Santa Clara River on single occasions (Bloom Biological 2008). Individuals observed foraging within NRSP in 2000 (Guthrie 2000A), along Castaic Creek in 2001 (Guthrie 2001A), and Salt Creek in 2005

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				(Dudek and Associates 2006B); it was observed flying north over the NRSP on April 29, 2007 (Bloom Biological 2007A); all of these occurrences were thought to be migrants in the Project site; moderate potential to occur within Entrada. No nesting individuals have been observed and available nesting habitat is marginal.
American peregrine falcon *Falco peregrinus anatum*	BCC, Delisted	CE[1] CFP	Nests near wetlands, lakes, rivers, or other water bodies, on cliffs, banks, dunes, and other human-made structures.	One individual was observed on one occasion over Wolcott agriculture field (Bloom Biological 2008). An individual was observed foraging over the Santa Clara River corridor near the Grapevine Mesa area within NRSP in 2000 (Guthrie 2000B); no other occurrences of this species have been documented on site during annual bird surveys. No nesting peregrine falcons have been observed on the Project site. Moderate potential for foraging within NRSP, Salt Creek, VCC, and Entrada. The species may nest in the Santa Susana Mountains, south of the Project site (Guthrie 2000B).
California condor *Gymnogyps californianus*	FE, USBC	CE CFP	Forages over wide areas of open rangelands, roosts on cliffs and in large trees and snags.	Until April 2008, California condors had not been known to nest or land within the Project area within the last 25 years (Bloom Biological 2007A, 2008). In April 2008, a California condor was observed feeding on a dead calf in a Potrero side canyon by wildlife biologist Chris Niemela (Carpenter 2008). It is a wide-ranging species that nests on remote cliffs, but forages over hundreds of square miles and is known to at least fly over the site (Bloom Biological 2008).
yellow-breasted chat (nesting) *Icteria virens*	—	CSC	Riparian thickets and riparian woodlands with a dense understory.	This species was observed nesting in riparian thickets in 2007 (Bloom Biological 2007A) and has been observed over multiple years along the Santa Clara River within dry riparian woodland habitat in the NRSP, Salt Creek, Entrada, and VCC during annual bird surveys. Recent observations were made within the Project site in 2006 (Guthrie 2006A, 2006C); suitable foraging and nesting

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
				habitat is present on the Project site.
loggerhead shrike *Lanius ludovicianus*	BCC	CSC	Grasslands and open shrublands with scattered shrubs, trees, fences, or other perches.	This species is a resident on site (Bloom Biological 2007A, 2008). In winter 2008 it was observed regularly in Potrero Canyon, Tapo Canyon, near Magic Mountain ranch gate, and Wolcott agriculture fields (Bloom Biological 2008). Observed to be fairly common within California sagebrush scrub and grasslands in the NRSP and also observed within VCC (Guthrie 1995A, 2004H), Salt Creek (Dudek and Associates 2006B) and Entrada (Dudek and Associates 2006E); it was observed nesting near Potrero Canyon and near an agriculture field near the Santa Clara River in 2007 (Bloom Biological 2007A); it was thought to have nested within and adjacent to the Entrada site (Guthrie 2000D, 2004G); suitable nesting and foraging habitat is present on the Project site.
black-crowned night-heron (rookery) *Nycticorax nycticorax*	—	***	Riparian; nests in dense-foliaged trees and dense emergent wetlands.	This species has been observed along the Santa Clara River within the NRSP, most recently in 2007 (Bloom Biological 2008), and in 2006 (Guthrie 2006A and Bloom Biological 2007A); within Entrada, in 2006 (Guthrie 2006C); and along Castaic Creek, in 2000 (Guthrie 2000E). This species was observed early in the year and is thought to be a wintering or migratory species within the Project site. No rookery sites have been detected on or near the site (Bloom Biological 2008). It is not known if this species has a rookery site within or adjacent to the Project site (Bloom Biological 2007A). Some suitable foraging and nesting habitat is present on site.
Nuttall's woodpecker (nesting) *Picoides nuttallii*	USBC	***	Lower elevation riparian deciduous and oak habitats.	This species is a common, year-round resident in cottonwood and willow riparian habitat along the Santa Clara River and Castaic Creek (Bloom Biological 2007A, 2008). It has been observed nearly every year since surveys began in 1988 (see Guthrie and Bloom Biological surveys).

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
summer tanager (nesting) *Piranga rubra*	—	CSC	Cottonwood-willow riparian habitats, especially older, dense stands along rivers and streams.	Individuals have been observed during annual bird surveys within NRSP in 1994 (Guthrie 1994B), in Entrada in 1991 and 1993 (Guthrie 1991A, 1993A, 1993B); it has also been observed east of the project site in 2000 and 2003 (Guthrie 2000E, 2003A); suitable nesting and foraging habitat present along the Santa Clara River and Castaic Creek within NRSP, VCC, and Entrada.
coastal California gnatcatcher *Polioptila californica californica*	FT, USBC	CSC	Various sage scrub communities, often dominated by California sage and buckwheat; generally avoids nesting in areas with a slope of greater than 40%, and typically less than 820 feet in elevation.	Suitable nesting and/or foraging habitat types are present on site, but all at higher elevations and/or with steeper slopes than typical of this species. The species has not been observed on site during numerous annual bird surveys (including USFWS protocol surveys). Focused protocol surveys have been conducted throughout the Project site in 2000 (Guthrie 2000A, 2000B, 2000D) 2004 (Guthrie 2004A, 2004B, 2004D, 2004E, 2004G) and 2007 (Dudek 2007B). Focused surveys have also been conducted off site in Legacy Village (Guthrie 2004C; Impact Sciences, Inc 2000; SAIC 2003) and other areas (Compliance Biology 2002, 2006A; PCR 1998). However, during the course of biological monitoring conducted in the VCC planning area, an individual California gnatcatcher was observed on October 5, 2007 by Dudek biologist Jeff Priest and biologist Ron Francis, a sub-consultant to Dave Crawford, Compliance Biology, Inc. (Priest 2007A). Given the time of year and the fact that no other California gnatcatchers have ever been observed within the Project site (despite extensive focused and general surveys), this observation is believed to have been that of a dispersing or transient individual.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
vermilion flycatcher (nesting) *Pyrocephalus rubinus flammeus*	—	CSC	Breeding habitat includes riparian woodlands, riparian scrub, and freshwater marshes.	A single individual was observed along the Santa Clara River in 1993 (Guthrie 1993B); suitable breeding and foraging habitat present on site along the Santa Clara River in the NRSP and Entrada and along Castaic Creek in VCC; some suitable habitat exists in Salt Creek.
Allen's/Rufous hummingbird (nesting) *Selasphorus sasin/rufus*	USBC/ USBC, BCC	***	Breeds in coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Migrates in woodland and scrub habitats.	This species has been observed along the Santa Clara River within and adjacent to the NRSP (Bloom Biological 2008; Guthrie 1998A, 1999B, and 2004F), in the upland area of the Entrada site (Guthrie 2004G), and along Castaic Creek in VCC (Guthrie 2004B). These observations were thought to be of migrants. The Project site provides suitable foraging, nesting, and migrating habitat throughout the NRSP, Entrada and VCC. The Project site is within this species' year-long range.
chipping sparrow (nesting) *Spizella passerina*	—	***	Open woodlands with sparse or low shrubs.	This species has been observed as a common migrant in the Project site (Bloom Biological 2007A); additional observations are within and adjacent to the NRSP near the Santa Clara River (Guthrie 1994B, 1997B, 1999B, and 2002A), near Grapevine Mesa (Guthrie 2000B) and Homestead Canyon (Guthrie 2004A), in Entrada (Guthrie 1991A, 1992, 1993A, and 1999A), and in VCC (Guthrie 1991B). Suitable habitat occurs on site, mostly in High Country with some open woodland areas in Potrero Canyon as well. The Project site is within this species' year-long range.
least Bell's vireo (nesting) *Vireo bellii pusillus*	FE, USBC, BCC	CE	Riparian vegetation with extensive willows below 2,000 feet.	This species has been observed almost every year along the Santa Clara River within the NRSP, and over multiple years in Entrada and VCC. It has been observed nesting within NRSP and Entrada most recently in 2007 (Bloom Biological 2007A) during annual bird surveys; on-site nesting sites in willow riparian habitats associated with the Santa Clara River and Castaic Creek. Suitable nesting and foraging habitat present within NRSP, VCC, and Entrada.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
yellow-headed blackbird *Xanthocephalus xanthocephalus*	—	CSC	Nests in freshwater marsh and forages in annual grassland, native grassland and agriculture.	This species has been observed within the NRSP (Guthrie 1996B, 1997B, 1999B, 2001B), in Entrada (Guthrie 1988, 2000E), and in VCC (Guthrie 1997A, 2006C). All observations were thought to be migrants. While suitable nesting and foraging habitat occurs on the Project site, this species is expected to occur very rarely on site.
			Mammals	
pallid bat *Antrozous pallidus*	—	CSC	Arid habitats, including grasslands, shrublands, woodlands and forests; prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.	This species was detected within NRSP during ANABAT surveys (Impact Sciences 2005) and in 2006 (Johnson 2006); on-site habitats and structures (*e.g.*, oak woodlands, buildings, SR-126 bridge) provide suitable roosting habitat within NRSP, Salt Creek, VCC, and Entrada.
western mastiff bat *Eumops perotis californicus*	—	CSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub and urban.	This species was not detected within NRSP during ANABAT surveys (Impact Sciences 2005), but it was observed in 2006 (Johnson 2006) within the NRSP; suitable roosting and foraging habitat is present within the Project site.
western red bat *Lasiurus blossevillii*	—	CSC	Occurs in a wide variety of habitats, including scrub, grassland, woodland, and riparian areas.	There were three acoustic detections of the western red bat in the Project area. Two 2004 detections (Impact Sciences 2005) were in willow riparian habitat, and the 2006 detection was under The Old Road Bridge (Johnson 2006). Suitable roosting and foraging habitat is present throughout the Project site.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	—	CSC	Open chaparral and California sagebrush scrub, grassland and agriculture.	Observed at mouth of Potrero Canyon within NRSP (Impact Sciences 2005). Suitable habitat is present within California sagebrush scrub and chaparral habitats within NRSP, Salt Creek, High Country, VCC, and Entrada.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
fringed myotis *Myotis thysanodes*	—	***	Occurs in a wide variety of habitats. Optimal habitats include pinyon–juniper, valley foothill hardwood and hardwood-conifer woodlands. Forms maternity colonies and roosts in caves, mines, buildings and crevices.	This species was detected within NRSP in coast live oak habitat during ANABAT surveys (Impact Sciences 2005); suitable roosting and foraging habitat is present within the Project site in oak woodlands scattered throughout NRSP and larger concentrations in High Country.
Yuma myotis *Myotis yumanensis*	—	***	Inhabits open forests and woodlands with sources of water. Species is closely tied to bodies of water, over which it feeds. Forms maternity colonies in caves, mines, buildings, or crevices.	This species was not detected within NRSP during ANABAT surveys (Impact Sciences 2005), but it was observed in 2006 (Johnson 2006) within the NRSP; suitable roosting and foraging habitat is present within the Project site.
San Diego desert woodrat *Neotoma lepida intermedia*	—	CSC	Open chaparral, California sagebrush scrub, cactus patches and the understory of tree thickets.	A species of desert woodrat was observed during 2004 small mammal surveys within NRSP (Impact Sciences 2004). Single woodrat middens were observed within Entrada (Dudek and Associates 2006E) and within High Country (Dudek and Associates 2006B). Moderate potential to occur within Salt Creek and VCC. Based on the known range of this species, It is assumed that the animals observed were the San Diego (*intermedia*) subspecies.
pocketed free-tailed bat *Nyctinomops femorosaccus*	—	CSC	Occurs in a wide variety of habitats, including scrub, grassland, woodland, and riparian areas.	The pocketed free-tailed bat was acoustically detected in 2006 in lower Potrero Creek (Johnson 2006). It roosts in crevices in cliffs and forages in open air in all habitats. The Project area is at the extreme northwestern part of pocketed free-tailed bat range in California and does not contain the desert habitats typically used by this species. Though present on site, it is probably an occasional visitor.
mule deer *Odocoileus hemionus*	—	†	Variety of habitats including forests, woodlands, brush, meadows and standing waters.	This species has been observed during surveys within Entrada (Dudek and Associates 2006E), NRSP (Impact Sciences 2005), and High Country and Salt Creek (Dudek and Associates 2006B). Suitable habitat exists throughout the Project site.

Table 4.5-9
Special-Status Wildlife Species Observed on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	On-Site Status
mountain lion *Puma concolor*	—	✦	Occurs in a variety of scrub and forested habitats.	This species has been observed within NRSP (Impact Sciences 2005), and High Country and Salt Creek (Dudek and Associates 2006B); the Project site is expected to host transient individuals and to be part of local lion(s)' home range.
American badger *Taxidea taxus*	—	CSC	Grasslands, agriculture, drier open stages of shrub, forest, and herbaceous habitats with friable soils.	Observed during small mammal surveys within NRSP (Impact Sciences 2004; Dudek and Associates 2006B). Suitable habitat exists within central portions of NRSP. Moderate potential to occur in some areas of VCC and Entrada.
black bear *Ursus americanus*	—	†	Dense forests; forages in brush forests, valley foothill riparian and wet meadows.	Observed within High Country in 2005 (Dudek and Associates 2006B). Some suitable habitat occurs within the southern portion of High Country.

Federal:
FE: Federally listed as endangered
FT: Federally listed as threatened
BCC: Bird of Conservation Concern
USBC: United States Bird Conservation Watch List

State:
CE: California-listed (state-listed) as endangered
CFP: California Fully Protected
CSC: California Species of Special Concern
WL: Watch List
***: Special Animal
✦: Specially protected mammal
†: Trust resource

Footnote:
[1] On October 11, 2007, the California Fish and Game Commission designated the American peregrine falcon (*F. p. anatum*) as a candidate for delisting under CESA (California Regulatory Notice Register 2007).

Table 4.5-10
Special-Status Wildlife Species with Potential to Occur on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	Habitat Suitability
			Fish	
southern steelhead *Oncorhynchus mykiss*	FE	—	As juveniles and for spawning: relatively cool freshwater streams, well oxygenated water with adequate depth and cover in the way of gravel, cobble, boulder, undercut banks, large and small woody debris, and overhanging vegetation. As non-spawning adults: Pacific Ocean.	Within the Santa Clara River drainage, southern steelhead historically inhabited Piru Creek, Sespe Creek, Santa Paula Creek, Hopper Creek, and possibly Pole Creek (Titus *et al.* n.d.). Presently, southern steelhead occur downstream of the proposed Project in the Santa Clara River watershed in Piru Creek between the confluence with the Santa Clara River and Santa Felicia Dam, in Sespe Creek, in Santa Paula Creek, and possibly in Hopper and Pole Creeks (Stoeker and Kelly 2005). Although reconnaissance surveys conducted along the Santa Clara River and tributary drainages within the Specific Plan area of the RMDP were negative in 2004 and 2005 (ENTRIX 2009), this species was included in this category (Potential to Occur on Site) due to potential downstream effects of the proposed Project.
			Amphibians	
California red-legged frog *Rana aurora draytonii*	FT	CSC	Water sources such as ponds, lakes, reservoirs, streams, and adjacent riparian woodlands.	Field investigations indicate that potential breeding or summer habitat is generally absent from the portion of the Santa Clara River within the NRSP (ENTRIX 2006B); the species generally avoids large river channels with widely fluctuating flows because such habitat does not permit successful reproductive activity (Hayes and Jennings 1989). Not documented in the Santa Clara River (CDFG 2008E). Surveys for this species were conducted within the Santa Clara River in 1995 (SMEA 1995) and 2001 (Sandburg 2001) with negative results. The species has been documented within the Piru Creek and San Francisquito Creek tributaries to the River; given the occurrence of California red-legged frog in nearby upstream and downstream tributaries, non-breeding frogs could occur within the portion of the Santa Clara River (and other drainages) on the Project site. Additionally, the stock ponds on the NRSP provide suitable habitat and could support breeding frogs, although none have been found there.

Table 4.5-10
Special-Status Wildlife Species with Potential to Occur on Site

Common Name *Scientific Name*	Status		Habitat Requirements	Habitat Suitability
	Federal	State		
			Reptiles	
rosy boa *Charina trivirgata* ssp. *roseofusca*	—	***	Inhabits desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes and mountains.	Suitable scrub and chaparral habitat occurs within the Project site with large concentrations in the northeastern portion of NRSP and southeastern portion of High Country, and some in Potrero Canyon; riverbank habitat occurs on site along the Santa Clara River and Castaic Creek; oak woodlands are sparsely scattered throughout the NRSP with larger concentrations in High Country; this species is known to occur in the Project region and presumed to occur on site.
San Bernardino ringneck snake *Diadophis punctatus modestus*	—	***	Inhabits open, relatively rocky areas, often in somewhat moist microhabitats near intermittent streams. Avoids moving through open or barren areas by restricting movements to areas of surface litter or herbaceous vegetation.	Suitable habitat occurs within the Project site in association with oak woodland and riverbank habitats; riverbank habitat occurs on site along the Santa Clara River and Castaic Creek; oak woodlands are sparsely scattered throughout the NRSP with larger concentrations in High Country; species is known to occur in the Project region and presumed to occur on site.
coast patch-nosed snake *Salvadora hexalepis virgultea*	—	CSC	Inhabits brushy or shrubby vegetation. Requires small mammal burrows for refuge and overwintering sites.	Suitable habitat occurs throughout the Project site in association with shrub habitats (upland and riparian scrub, chaparral and riverwash); California ground squirrel and Botta's pocket gopher burrows occur on site; species is known to occur in the Project region and presumed to occur on site.
south coast garter snake *Thamnophis sirtalis* spp.	—	CSC	Inhabits scrub, chaparral, annual and native grassland, freshwater marsh, and agriculture.	Suitable habitat occurs throughout the Project site in association with scrub, chaparral, grassland, and agriculture habitats.
			Birds	
grasshopper sparrow *Ammodramus savannarum*	—	***	Dense, dry or well-drained annual and native grasslands with mix of grasses and forbs. May occur in fallow agricultural fields, especially those periodically planted in oats and barley.	The Project site is just south of the southern edge of the portion of this species' summer range which occurs at approximately the Los Angeles/Kern County boundary. There is at least moderate potential for this species to breed/forage in grasslands and some agricultural areas which occur mostly in the central portion of NRSP, San Martinez Grande, along portions of the Santa Clara River and Castaic Creek, and some portions of VCC and Entrada.

Table 4.5-10
Special-Status Wildlife Species with Potential to Occur on Site

Common Name *Scientific Name*	Status		Habitat Requirements	Habitat Suitability
	Federal	State		
Bell's sage sparrow (nesting) *Amphispiza belli belli*	BCC	WL	Coastal scrub and chaparral.	This species has been observed off site in Castaic Mesa (Compliance Biology 2006A), near Soledad Canyon in 2002 (Compliance Biology 2003), and in the Legacy Village project site, adjacent to the NRSP and Salt Creek area (Guthrie 2004C). Suitable nesting and foraging habitat present within the Project site with concentrations of coastal scrub and chaparral in the northeastern portion of the NRSP and southeastern portion of High Country.
black-chinned sparrow (nesting) *Spizella atrogularis*	BCC, USBC	***	Chaparral and sagebrush scrub.	Suitable habitat occurs within Project site in association with chaparral and coastal scrub habitats which are concentrated in the northeastern portion of the NRSP and the southeastern portion of High Country.
			Mammals	
ringtail *Bassariscus astutus*	—	CFP	Mixture of forest and shrubland in close association with rocky areas and riparian habitats; uses hollow trees, snags, and logs for cover and reproduction.	This species was surveyed for during the mammal surveys in 2004 (Impact Sciences 2005). Cameras, scent/track stations and spotlight survey techniques were used to detect these species. Low potential to occur based on lack of suitable habitat, such as hollow trees, logs, snags and abundant rocky areas. In addition, these species are not usually found more than 1 kilometer away from permanent water; therefore these species would most likely have been detected during the numerous studies performed near the Santa Clara River and its tributaries (Haglund & Baskin 2000; Impact Sciences 2005; Dudek and Associates 2006D, 2006E).
Townsend's big-eared bat *Corynorhinus townsendii*	—	CSC	Utilizes a variety of communities, including conifer and oak woodlands and forests, arid grasslands and deserts and high-elevation forests and meadows. Requires appropriate roosting, maternity and hibernacula sites free from human disturbance.	This species was not detected within NRSP during ANABAT surveys (Impact Sciences 2005). Suitable roosting and foraging habitat is present within the Project site.

Table 4.5-10
Special-Status Wildlife Species with Potential to Occur on Site

Common Name *Scientific Name*	Status		Habitat Requirements	Habitat Suitability
	Federal	State		
western small-footed myotis *Myotis ciliolabrum*	—	CSC	Occurs in a wide variety of habitats, including scrub, grassland, woodland, and riparian areas. Requires appropriate roosting, maternity and hibernacula sites free from human disturbance.	Impact Sciences (2005) identified the 40 kHz frequency range species in 2004 as the western small-footed myotis, but without additional information (*e.g.*, longer time-series recording or capture), this identification could not be confirmed because this frequency is characteristic of at least two other species that could occur on site: long-legged myotis and little brown bat. In 2006, 40 kHz bat species were recorded in all three survey locations along Potrero Creek, along the Santa Clara River at Walcott Road, and at the plant nursery site in upper Long Canyon. Without definitive presence/absence information, for the purpose of this analysis, it is assumed that the western small-footed myotis occurs in the Project area.
long-legged myotis *Myotis volans*	—	CSC	Occurs in a wide variety of habitats, including scrub, grassland, woodland, and riparian areas. Requires appropriate roosting, maternity and hibernacula sites free from human disturbance.	The presence of the long-legged myotis was not confirmed in the Project area during the acoustic and mist netting surveys conducted in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, bats with acoustic signatures in the 40 kHz range, which is the range for the long-legged myotis, were detected on site in 2004 and 2006. Impact Sciences (2005) identified the 40 kHz frequency-range species in 2004 as the western small-footed myotis, but without additional information (*e.g.*, longer time-series recording or capture), this identification could not be confirmed. Based on the frequency data alone, the 40 kHz species could be western small-footed myotis, long-legged myotis, or little brown bat; therefore, all three species should be considered to be potentially present on site. In 2006, 40 kHz bat species were recorded in all three survey locations along Potrero Creek, along the Santa Clara River at Walcott Road, and at the plant nursery site in upper Long Canyon.

Table 4.5-10
Special-Status Wildlife Species with Potential to Occur on Site

Common Name *Scientific Name*	Status Federal	Status State	Habitat Requirements	Habitat Suitability
southern grasshopper mouse *Onychomys torridus ramona*	—	CSC	Inhabits desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	This species has not been detected within the NRSP during small mammal trapping (Impact Sciences 2005). This species has potential to occur at least in low densities on site within coastal scrub and grassland vegetation communities; it is not expected to occur within other habitats on the Project site.

Federal:
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing as threatened or endangered
BCC: Bird of Conservation Concern
USBC: United States Bird Conservation Watch List

State:
CE: California-listed (state-listed) as endangered
CT: California-listed (state-listed) as threatened
CFP: California Fully Protected
CSC: California Species of Special Concern
WL: Watch List
**: Overwintering (or roosting) sites should be protected, butterfly probably not at risk currently
***: Special Animal
†: Trust resource

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	Habitat Suitability
			INVERTEBRATES	
			Crustacea Order Anostraca (fairy shrimp)	
vernal pool fairy shrimp *Branchinecta lynchi*	FT	—	Vernal pools.	Wet season vernal pool surveys were conducted in December 2007 to March 2008 in five previously identified depressions associated with western spadefoot surveys, including three in Potrero Canyon, one between Grapevine Mesa and Lion Canyon, and one east of Lion Canyon (Compliance Biology 2006C; Crawford 2007). Two of the five pools retained adequate water for testing, and results were negative. One depression located between Grapevine Mesa and Lion Canyon was a detention basin, and the other depression in Potrero Canyon was located on an oil well pad and storage area where water collected next to a bermed area. Neither of these depressions exhibited typical fairy shrimp habitat characteristics. No discernable depressions that could collect water were found at the other three previously identified locations, and water was not retained at these sites. All three were on dirt access roads. There is no indication of vernal pools or other seasonal pools on site that are suitable for fairy shrimp. The nearest documented vernal pools in relation to the Project area that could be source populations for fairy shrimp include at least two vernal pools located in the Plum Canyon area of Los Angeles County (Cruzan Mesa), approximately 10 miles from the Project area, and the Carlsberg vernal pools in Moorpark in Ventura County, approximately 15 miles from the Project area (Root 2008). Both the Carlsberg and Cruzan Mesa pools support the vernal pool fairy shrimp (USFWS 1998A). The USFWS is in concurrence that the Project is not likely to adversely affect listed fairy shrimp because these species are not known to occur in the Project area and suitable habitat is not known to occur in the Project area (Root 2008).
San Diego fairy shrimp *Branchinecta sandiegonensis*	FE	—	Vernal pools.	
Riverside fairy shrimp *Streptocephalus woottoni*	FE	—	Vernal pools.	

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	Habitat Suitability
			Insecta Order Lepidoptera (butterflies and moths)	
Quino checkerspot butterfly *Euphydryas editha quino*	FE	—	Occurs in localized colonies, always closely associated with the larval foodplant dot-seed plantain (*Plantago erecta*) and clay or cryptobiotic soils.	Based on a focused habitat assessment, it was concluded that the primary larval food plant (*Plantago erecta*) does not occur on the site (Compliance Biology 2004A, 2004C). This butterfly was last documented in the Santa Susana Mountains, approximately 30 miles south and southwest of the Project site in 1954.
			AMPHIBIANS	
coast range newt *Taricha torosa torosa*	—	CSC	Often occurs in areas where streams and ponds dry up in the summer. Occurs beneath logs, boards, rocks, and in rodent burrows, but adults must return to water to breed. May be found in drier habitats, such as oak forests, chaparral, and rolling grasslands. Commonly found in or near ditches, ponds, lakes, and streams; however, a permanent water source is not necessary. Stream-breeding populations typically breed in slow moving or stagnant pools in streams.	While suitable habitat occurs in the Project area, this species is not known to occur in the Project area. The nearest current occurrences range from 20 to 25 miles from the Project site, in the Santa Monica Mountains. Other southern California occurrences are in the Angeles National Forest in the San Gabriel Mountains, the Coast Ranges in Santa Barbara County, and the Cuyamaca Range in San Diego County.
			BIRDS	
coastal (San Diego) cactus wren *Campylorhynchus brunneicapillus sandiegensis*	BCC	CSC	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub	No observations of cactus wrens have been made in the Project area, and the coastal (San Diego) cactus wren subspecies is not expected to occur on site based on its range. There are no large concentrations of cactus thickets on site that provide the necessary habitat constituent for nest sites.

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	Habitat Suitability
great egret (rookery) *Ardea alba*	—	***	Nests colonially in large trees. Rookery sites are typically located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Individuals commonly observed over multiple years foraging within the Santa Clara River in NRSP, Entrada, and VCC; moderate potential for foraging within Salt Creek. Recent observations were made in 2006 (Guthrie 2006A, 2006C). No rookery sites have been observed on the Project site during annual bird surveys.
great blue heron (rookery) *Ardea herodias*	—	***	Nests colonially in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites are usually in close proximity to foraging areas such as marshes, lake margins, tide-flats, wet meadows, rivers, and streams.	Individuals commonly observed over multiple years foraging within the Santa Clara River within NRSP, Entrada and VCC; moderate potential for foraging within Salt Creek. Recent observations were made in 2006 (Guthrie 2006A, 2006C). No rookery sites have been observed on the Project site during annual bird surveys.
Swainson's hawk *Buteo swainsoni*	BCC, USBC	CT	Open grassland, shrublands, croplands.	This species is a seasonal migrant. One individual (thought to be a migrant) was observed in 2000 in the NRSP (Guthrie 2000C). Two more observations were made within the vicinity of the Project site: one individual was observed northeast of VCC (Compliance Biology 2006A), and another east of Old Road bridge (Guthrie 1997A). Although suitable foraging habitat is present on the Project site, this species has not been documented to nest in southern California and is only expected to rarely forage over the site.
mountain plover *Charadrius montanus*	BCC, USBC	CSC	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts.	Some suitable habitat exists on site in agriculture and California annual grassland communities, which primarily are located in the central portion of the NRSP, San Martinez Grande, and adjacent to the Santa Clara River riparian areas. These communities have marginal habitat quality on site to support this species. This species only winters in southern California and only rarely occurs. It is not expected to breed on the project site.
bald eagle *Haliaeetus leucocephalus*	Delisted	CE, CFP	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains.	No suitable lake habitat exists on the project site and no records of nesting on the project site. There are no large bodies of water, large rivers, or seacoasts within the vicinity of the Project site.

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	Status State	Habitat Requirements	Habitat Suitability
least bittern (nesting) *Ixobrychus exilis*	—	CSC	Dense emergent wetlands of cattails and tules are essential.	Cattails and tules occur within the Santa Clara River corridor; however, these areas do not contain the dense emergent vegetation characteristic of nesting habitat of this species.
long-billed curlew (nesting) *Numenius americanus*	BCC, USBC	WL	Nests in grazed, mixed grass and short-grass prairies. Localized nesting along the California coast. Coastal estuaries, mudflats, open grasslands and croplands are used in winter for foraging.	Some suitable habitat exists on site in agriculture and California annual grassland communities, which primarily are located in the central portion of the NRSP, San Martinez Grande, and adjacent to the Santa Clara River riparian areas. This species may occur rarely in the winter in the Project vicinity, but the Project site is outside its nesting range.
osprey (nesting) Pandion haliaetus	—	WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast.	Ospreys need areas that support fish for long periods of time. There are no large bodies of water on site or adjacent to the Project site that could support fish for long periods of time. One individual was observed on March 31 (Guthrie 2000B) and was probably in migration.
double-crested cormorant *Phalacrocorax auritus*	—	WL	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes.	No suitable lake habitat exists on the project site and no records of nesting on the project site. There are no large bodies of water, large rivers, estuaries or seacoasts within the vicinity of the Project site.
white-faced ibis (rookery site) *Plegadis chihi*	—	WL	Nests in dense emergent wetlands and marshes; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries.	Very little marsh habitat exists on site, and is primarily located south of the Santa Clara River in Potrero Canyon. This species is not known to regularly breed in California anymore, and there is not enough suitable habitat on the Project site to support rookery sites.
purple martin (nesting) *Progne subis*	—	CSC	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland.	This species may occasionally forage in the Project vicinity, but the site is outside its nesting range. There is limited suitable nesting habitat because there are no tall sycamores, pines, or coniferous forest communities on the Project site, and this species is not expected to nest on site. One individual was observed within NRSP (Guthrie 1994B).

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	Status State	Habitat Requirements	Habitat Suitability
bank swallow (nesting) *Riparia riparia*	—	CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, or the ocean to dig a nesting hole.	The Project site is not within this species' range. The required nesting habitat does not exist on the Project site, and no recent records of nesting in the area. Typically these species nest in areas such as the Sacramento and Feather rivers.
California spotted owl *Strix occidentalis occidentalis*	BCC, USBC	CSC	Old growth oak and oak–conifer habitats.	The Project site is within the species' yearlong range. However, this species generally requires dense, old growth forest areas for foraging and cover; breeds in mature, multi-layered forest stands and nests generally in a tree or snag cavity. No conifer habitats occur on site. Oak woodlands exist on site, but are generally more open and often occur as oak savannahs. Dense, mature coast live oak woodlands exist within canyons in High Country and Salt Creek that may be suitable habitat for these species; however in the Angeles National Forest (east of the Project site), these species have been documented using canyon live oak habitats with co-dominant conifer species (Stephenson 1991). In the Cleveland National Forest in San Diego, they have been documented in woodlands dominated by both coast and canyon live oak, but also with co-dominant conifer species (Stephenson 1991). Overall, there is limited dense oak woodland on site to support this species.
			MAMMALS	
Mexican long-tongued bat *Choeronycteris mexicana*	—	CSC	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland. Roosts in caves, mines, and buildings.	The Project site is not within this species' range. The closest range (and only known range in California) is in coastal San Diego County, approximately 100 miles southwest. This species requires habitats associated with desert habitats, and these are not found within the Project site.

Table 4.5-11
Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site

Common Name *Scientific Name*	Status Federal	 State	Habitat Requirements	Habitat Suitability
spotted bat *Euderma maculatum*	—	CSC	Occupies a wide variety of habitats from arid deserts and grasslands, to mixed conifer forests. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	The Project site is within this species' yearlong range. This species was not detected within NRSP during ANABAT surveys conducted in 2004 (Impact Sciences 2005) or in 2006 (Johnson 2006). There are no cliffs or caves on site; therefore there is limited suitable roosting habitat on or bordering the Project site. Some suitable foraging habitat may occur in grasslands on site; however no desert or mixed conifer habitats occur on site or near the Project site. Only rare to occasional spotted bat sightings have been recorded in the Project vicinity.
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	—	CSC	Inhabits lower elevation grasslands and California sagebrush communities on open ground with fine sandy soils. May not dig extensive burrows, hiding instead under weeds and dead leaves.	This species has not been detected within NRSP during small mammal live trapping (Impact Sciences 2005). Some suitable habitat may exist on site in grasslands; however there are no fine sandy soils associated with grassland or coastal scrub communities on site. The coastal scrub communities may be too in high elevation for the species. This species is not expected to occur on other portions of the Project site because the known range is south of Project site.
big free-tailed bat *Nyctinomops macrotis*	—	CSC	Rugged, rocky canyons.	This species has not been observed during wildlife surveys within the Project site. The closest range is in southwest San Diego County and is rare in California. This species is not expected to occur on site due to the distance from its known range.

Federal:
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing as threatened or endangered
BCC: Bird of Conservation Concern
USBC: United States Bird Conservation Watch List

State:
CE: California-listed (state-listed) as endangered
CT: California-listed (state-listed) as threatened
CFP: California Fully Protected
CSC: California Species of Special Concern
WL: Watch List
**: Overwintering (or roosting) sites should be protected, butterfly probably not at risk currently
***: Special Animal
†: Trust resource

4.5.3.2 Survey Methods

A cumulative list of biological surveys conducted within the Project area and vicinity is included above in **Table 4.5-6** in **Subsection 4.5.3.1**, Summary of Literature Review and Biological Studies Conducted in Project Area. This subsection describes in detail the general methods employed in the surveys conducted between 1988 and 2008; for additional specific survey information (*e.g.*, whether surveys were USFWS protocol surveys), refer to the Survey Dates/Season and General Methods columns in **Table 4.5-6**.

4.5.3.2.1 Vegetation Communities Mapping

Vegetation communities were mapped in the field directly onto 200- and 400-scale (1 inch=200 feet and 1 inch=400 feet) false-color digital orthographic maps (AirPhotoUSA 2005) of the RMDP and SCP study areas in July and August 2006. Biologists covered the study areas by foot and vehicle, traversing existing dirt roads and traveling along canyons and ridgelines. Dudek Geographic Information Systems (GIS) technician Mark McGinnis digitized the vegetation boundaries into an ArcView file and created a GIS coverage for vegetation communities (Dudek and Associates 2006A, 2006B, 2006C).

Vegetation community and land cover classifications used in this EIS/EIR generally follow the Vegetation Classification and Mapping Program "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" system (CDFG 2003, updated in October 2007 (CDFG 2007D)). Community classifications were selected based on site factors, descriptions, distribution, and characteristic species present within an area. In some areas, the vegetation communities observed in the field did not match those described in CDFG (2003). In these instances, Dudek generated additional site-specific vegetation community classifications later described as "modified" and defined by the dominant plant species. Existing field conditions also necessitated the addition of adjectives such as "burned" and "disturbed." Those in a "burned" condition had recently burned and vegetation was observed to be recovering, with shrub species stump sprouting. Vegetation communities classified as "disturbed" were those where native vegetation communities were visually estimated to contain 20% to 50% native species by absolute cover. Areas where native species cover was visually estimated to be less than 20% were mapped as disturbed land. Areas mapped as agriculture have been or are in cultivation. Areas mapped as developed represent paved roads, structures, and other hardscape features. Where a grassland vegetation community was visually estimated to contain 10% or more absolute cover of native perennial grasses (*e.g.*, *Nassella pulchra*), the area was mapped as a native grassland. The 10% threshold is an industry standard for identifying perennial native grasslands (Keeler-Wolf *et al.* 2007). Oak woodland is defined as areas with 20% to 50% cover by oak trees. Oak/grass includes areas where oak trees comprise less than 20% of the total cover.

4.5.3.2.2 Botanical Surveys

Multi-year focused surveys for special-status plants were conducted in the spring and summer by Dudek and FL*x* throughout the Project area from 2001 to 2007. Dudek conducted focused botanical surveys in the spring and summer from 2002 through 2005 on the development portion of the Specific Plan, VCC, and Entrada planning areas; these surveys excluded agricultural fields and the River Corridor SMA and overlapped slightly with the High Country SMA (Dudek and Associates 2002A, 2002B, 2002C, 2004B, 2004C, 2004E, 2004F, 2004G, 2004H, 2006F, 2006G, 2006H). Additional botanical surveys of the majority of the High Country SMA and the Salt Creek area were conducted between April and July of 2003 (Dudek and Associates 2004I); the remainder of the High Country SMA was surveyed between May and July of 2006 (Dudek and Associates 2006B). In 2006 and 2007, surveys focused on known locations of the state-listed endangered San Fernando Valley spineflower (SFVS) (Dudek and Associates 2006I, 2006J, 2006K; Dudek 2007F, 2007G, 2007H). In 2007, surveys also focused on known occurrences of the undescribed everlasting (Causey 2007). FL*x* conducted surveys in May and June of 2001 at four project locations within the Specific Plan area: River Village (now referred to as Landmark Village), Homestead (comprising the areas formerly known as Homestead, Homestead Estates, and Chiquito Canyon Residential), Salt Creek Canyon area, and a portion of Airport Mesa (FL*x* 2002A). FL*x* conducted surveys in October 2002 for the undescribed sunflower in the mesic areas of Castaic Junction and the River Village (now referred to as Landmark Village) and Water Reclamation Plant (WRP) sites within the Specific Plan area (FL*x* 2002B, 2002C). In 2004, FL*x* also conducted surveys along the Santa Clara River from the WRP westward to the Los Angeles/Ventura County line and along the tributary Castaic Creek from I-5 southwest to its confluence with the main River channel; these surveys focused on the SFVS in May and June and on the late-blooming undescribed sunflower in September (FL*x* 2004A). FL*x* conducted special-status plant surveys at the Entrada site fireworks area focusing on the SFVS and the slender mariposa lily (*Calochortus clavatus* var. *gracilis*) in April and May 2004, 2005, and 2006 (FL*x* 2004B, 2005, 2006A), and they conducted special-status plant surveys focusing on the SFVS at the Potrero Irrigation Project site on April 24, 2006 (FL*x* 2006B).

These surveys were conducted by Dudek staff biologists and by Anuja Parikh and Nathan Gale of FL*x*. All surveys were conducted on foot. Surveys were conducted in teams of two or more biologists, with at least one senior-level biologist with extensive botanical experience included on each team. Biologists were able to observe reference populations of the SFVS and other special-status plant species in order to develop a search-image prior to conducting surveys of the Project site. Precipitation was variable across the time span surveys were conducted. During the 2006–2007 rain season (October 2006 to September 2007), the Piru 2 ESE weather station in Los Angeles County experienced its driest year in recorded history, with 4.1 inches of rain—less than one quarter of the mean amount (17.40 inches; WRCC 2008). There was a less-than-average

amount of rainfall in the 2001–2002, 2003–2004 and 2005–2006 rain seasons. There was a greater-than-average rainfall in the 2002–2003 and 2004–2005 rain seasons (WRCC 2008). With the numerous surveys conducted over several consecutive years and under conditions varying from less-than-average to greater-than-average rainfall, these surveys provide a comprehensive botanical database for the analysis of impacts to botanical resources in the Project area.

The focused botanical surveys conducted by Dudek typically did not include all portions of the Santa Clara River: Surveys along the Santa Clara River were conducted in areas where bank stabilization projects were likely to occur. However, focused botanical surveys were conducted along the River by FL*x* (2002B, 2002C, 2004A). For all focused botanical surveys, areas of dense chaparral were surveyed where feasible.

Based on the literature review described for botanical resources in **Section 4.5.3.1** above, surveys focused on the identification and location of the SFVS and other potentially occurring special-status plant species, including state- and federally-listed species and California Native Plant Society (CNPS) List 1B, 2, and 4 species. **Table 4.5-12** lists those species, based on the presence of suitable habitat and soils.

Table 4.5-12
Special-Status Plant Species Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage Ranking	Primary Habitat Associations/ Life Form/Blooming Period
Arenaria paludicola	marsh sandwort	FE/SE	1B	S1.1	dense freshwater marsh/perennial herb/May–August
Astragalus brauntonii	Braunton's milk-vetch	FE/None	1B	S2.1	chaparral, coastal sage scrub, grasslands; often on carbonate substrates/perennial herb/March–July
Atriplex coulteri	Coulter's saltbush	None/None	1B	S2.2	coastal sage scrub and grasslands on alkaline or clay substrate/perennial herb/March–October
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None	1B	S2?	coastal bluff scrub and coastal sage scrub on alkaline substrate/annual herb/May–October
Baccharis malibuensis	Malibu baccharis	None/None	1B	S1.1	chaparral, coastal sage scrub, cismontane woodland/ deciduous shrub/August
Berberis nevinii	Nevin's barberry	FE/SE	1B	S2.2	chaparral, coastal sage scrub, riparian scrub, cismontane woodland on sandy or gravelly substrate/evergreen shrub/March–April
Brodiaea filifolia	thread-leaved Brodiaea	FT/SE	1B	S2.1	clay substrate openings in chaparral, sage scrub, and grasslands/perennial herb (geophyte)/March–June
Calochortus clavatus var. *clavatus*	club-haired mariposa lily	None/None	4	S3.3	chaparral and coastal sage scrub/perennial herb (geophyte)/March–May
Calochortus clavatus var. *gracilis*	slender mariposa lily	None/None	1B	S1.1	chaparral and coastal sage scrub/perennial herb (geophyte)/March–May
Calochortus plummerae	Plummer's mariposa lily	None/None	1B	S3.2	chaparral, coastal sage scrub, cismontane woodland, grasslands on rocky granitic substrate/perennial herb (geophyte)/May–July
Calochortus weedii var. *vestus*	late-flowered mariposa lily	None/None	1B	S2.2	chaparral, cismontane, and riparian woodland/perennial herb (geophyte)/June–August
Calystegia peirsonii	Peirson's morning-glory	None/None	4	S3.2	chaparral, coastal sage scrub, cismontane woodland, grassland/ perennial herb/May–June
Calystegia sepium ssp. *binghamiae*	Santa Barbara morning-glory	None/None	1A	SH	marshes and swamps/perennial herb/April–May
Centromadia [=*Hemizonia*] *parryi* ssp. *australis*	southern tarplant	None/None	1B	S2.1	mesic edges of marshes in grasslands/annual herb/May–November

Table 4.5-12
Special-Status Plant Species Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage Ranking	Primary Habitat Associations/ Life Form/Blooming Period
Cercocarpus betuloides var. *blancheae*	island mountain-mahogany	None/None	4	S3.3	chaparral, closed-cone coniferous forest/evergreen shrub/February–May
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC/SE	1B	S1.1	Coastal sage scrub, sandy soils/annual herb/April–June
Deinandra [=*Hemizonia*] *minthornii*	Santa Susana tarplant	None/SR	1B	S2.2	chaparral and coastal sage scrub on rocky substrate/deciduous shrub/July–November
Delphinium parryi ssp. *blochmaniae*	dune larkspur	None/None	1B	S2.2	maritime chaparral, coastal dunes/perennial herb/April–May
Dodecahema leptoceras	slender-horned spineflower	FE/SE	1B	S1.1	Alluvial scrub on sandy substrate/annual herb/April–June
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None	1B	S2.1	clay openings in chaparral and coastal sage scrub, grasslands/perennial herb/April–June
Dudleya cymosa ssp. *marcescens*	marcescent dudleya	FT/CR	1B	S2.2	chaparral, often on volcanic substrate/perennial herb (geophyte)/April–June
Dudleya cymosa ssp. *Ovatifolia*	Santa Monica Mountains dudleya	FT/None	1B	S2.2	chaparral and coastal sage scrub, often on volcanic substrate/perennial herb (geophyte)/April–June
Dudleya multicaulis	many-stemmed dudleya	None/None	1B	S2.1	coastal bluff scrub, coastal sage scrub, valley and foothill grassland, rocky, often clay substrate/perennial herb/April–June
Dudleya parva	Conejo dudleya	FT/None	1B	S2.1	coastal sage scrub and grassland on rocky, gravelly clays/perennial herb/May–June
Erodium macrophyllum	round-leaved filaree	None/None	2	N/A	cismontane woodland and grasslands on clay substrate/annual herb/March–May
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	None/None	1A	SH	marshes and swamps/perennial herb/August–October
Horkelia cuneata ssp. *puberula*	mesa horkelia	None/None	1B	S2.1	chaparral, cismontane woodland, coastal sage scrub on sandy or gravelly substrate/perennial herb/February–December

Table 4.5-12
Special-Status Plant Species Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage Ranking	Primary Habitat Associations/ Life Form/Blooming Period
Juglans californica var. *californica*	southern California black walnut	None/None	4	S3.2	chaparral, cismontane woodland, coastal sage scrub, alluvial scrub/deciduous tree/March–May
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None	4	S3.2	coastal dunes, meadows, seeps, marshes, and swamps/ perennial herb/May–June
Malacothamnus davidsonii	Davidson's bush mallow	None/None	1B	S1.1	chaparral, coastal sage scrub, riparian woodland/ deciduous scrub/June–January
Nama stenocarpum	mud nama	None/None	2	S1S2	edges of lakes, rivers, ponds, vernal pools/annual/January–July
Nemophila parviflora var. *quercifolia*	oak-leaved nemophila	None/None	4	S3.3	cismontane woodland, lower montane coniferous forest/annual herb/May–June
Nolina cismontana	chaparral nolina	None/None	1B	S1.1	chaparral, coastal sage scrub on sandstone or gabbro substrate/ perennial shrub/May–July
Opuntia basilaris var. *brachyclada*	short-joint beavertail	None/None	1B	S1.2	chaparral, Joshua tree woodland, Mojavean desert scrub/succulent shrub/April–June
Pentachaeta lyonii	Lyon's pentachaeta	FE/SE	1B	S1.1	openings in chaparral and coastal sage scrub, grasslands/annual herb/March–August
Rorippa gambelii	Gambel's watercress	FE/ST	1B	N/A	Marsh and swamps (freshwater and brackish)/perennial herb/April–June
Senecio aphanactis	rayless ragwort	None/None	2	S1.2	chaparral, coastal sage scrub, cismontane woodland on alkaline substrate/annual herb/January–April
Sidalcea neomexicana	salt spring checkerbloom	None/None	2	S2S3	chaparral, coastal sage scrub, and playas on alkaline substrate/perennial herb/March–June
Thelypteris puberula var. *sonorensis*	Sonoran maiden fern	None/None	2	S2.2	meadows and seeps/perennial herb/fertile January–September

Legend

FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal candidate for listing
SC: State candidate for listing
SE: State-listed as endangered

CNPS List 1A: Plants presumed extinct in California
CNPS List 1B: Plants rare, threatened, or endangered in California and elsewhere
CNPS List 2: Plants rare, threatened, or endangered in California but more common elsewhere
CNPS List 3: Plants about which we need more information–a review list
CNPS List 4: Plants of limited distribution–a watch list

Table 4.5-12
Special-Status Plant Species Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/ State	CNPS List	California Heritage Ranking	Primary Habitat Associations/ Life Form/Blooming Period

ST: State-listed as threatened
SR: State-listed as rare

California Heritage (CNDDB) Element Ranking

S1: Less than 6 Eos OR less than 1,000 individuals OR less than 2,000 acres
- S1.1 = very threatened
- S1.2 = threatened
- S1.3 = no current threats known.

S2: 6 to 20 Eos OR 1,000 to -3,000 individuals OR 2,000 to 10,000 acres
- S2.1 = very threatened
- S2.2 = threatened
- S2.3 = no current threats known.

S3: 21 to 80 Eos or 3,000 to 10,000 individuals OR 10,000 to 50,000 acres
- S3.1 = very threatened
- S3.2 = threatened
- S3.3 = no current threats known.

S4: Apparently secure within California; This rank is clearly lower than S3 but factors exist to cause some concern; *i.e.*, there is some threat, or somewhat narrow habitat. NO THREAT RANK.

S5: Demonstrably secure to ineradicable in California. NO THREAT RANK.

Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a **bird's eye or aerial view** when ranking sensitive elements rather than simply counting element occurrences.
2. Uncertainty about the rank of an element is expressed in two major ways: First, by expressing the ranks as a **range** of values: *e.g.*, S2S3 means the rank is somewhere between S2 and S3. Second, by adding a "?" to the rank: *e.g.*, S2? This represents more certainty than S2S3, but less certainty than S2

.

Focused botanical surveys were generally conducted between late April and August. Two of the special-status species listed in the table above have blooming times on the outside limits of the survey periods: Nevin's barberry (March through April) and rayless ragwort (January through April). Nevin's barberry is a large perennial shrub and would have been observed on site during the annual surveys conducted between 2002 and 2007 whether blooming or not. Rayless ragwort is an herbaceous shrub, one to two meters tall and would have been observed even at the end of its blooming cycle. Three other ragwort species were observed on site during the annual surveys conducted between 2002 and 2007, and rayless ragwort would have been observed if present.

All plant species encountered during the botanical field surveys were identified and recorded for inclusion in the survey reports. Latin and common names of plants follow *The Jepson Manual* (Hickman 1993) or other recent published taxonomic treatments. Where not listed in Hickman (1993), common names were taken from Abrams (1923). Where not found in this reference, a variety of sources were used (*e.g.*, Abrams 1923; Dale 1985; or Roberts 1998).

SFVS occurrences were mapped as polygons. Where plants were less than four meters (13.1 feet) from one another, they were mapped in the same polygon. Where they were four meters or farther from one another, they were mapped as separate polygons. The four-meter distance was selected based on topography, vegetation density, detectability of the plants, the general accuracy of the Global Positioning System (GPS), and time constraints. The distance is not specifically tied to SFVS biology (*i.e.*, reproductive biology, seed dispersal) and thus is not intended to reflect reproductively isolated sub-populations, the total extent of the SVFS seed bank, or any other feature of the species' life history.

Field botanists walked around the perimeter of each spineflower polygon, defining the boundary by SFVS occurrence at a less-than-four-meter (13.1-foot) distance. Polygon boundaries were defined by manually storing GPS location data in a hand-held Trimble GPS unit (sub-meter precision) every one to four meters (3.3 to 13.1 feet) along the polygon boundary. Each SFVS polygon was given a unique identifier (*i.e.*, numbers and/or letters) in the field. Field data sheets, which included estimated plant numbers and associated species, were completed for each polygon. GPS data were analyzed using GIS or Computer Assisted Drafting software (*e.g.*, ArcGIS, AutoCAD), then delineated so that the outer boundary was defined as a "minimum convex polygon" (*i.e.*, the smallest polygon whose outer perimeter is made up of convex angles).

SFVS numbers (or numbers of other sensitive species, where observed) in each polygon were estimated by counting or estimating the number of individuals in a rectangular "sample estimation area" (to account for the "clumped" distributions) within the polygon. Sample estimation areas ranged from 0.02 square meters (10 centimeters by 20 centimeters (3.9 inches by 7.9 inches)) to two square meters (one meter by two meters (3.3 feet by 6.6 feet)); the size, location, and number of samples were selected based on the professional judgment and

experience of the field biologists, depending on polygon size, plant density, and variation in plant density. SFVS numbers as estimated within each sample estimation area were extrapolated (based on area) and rounded to one significant figure (*e.g.*, 500; 100; 1,000) to represent the entire polygon.

Polygons for other special-status plant species were mapped utilizing aerial photography and topographic maps. The exception was CNPS List 4 species, which were considered to have a relatively low sensitivity level and were not specifically mapped. Professional judgment and experience were used to delineate these polygons based on the detectability of the species, topography, and vegetation. Perennial special-status plants were mapped at a 10- to 20-meter (32.8- to 65.6-foot) scale due to their population dynamics (including seed dispersal and pollination range), observability, habit, habitat limitations, and mapping accuracy.

4.5.3.2.3 Oak Tree Surveys

Oak tree surveys were conducted within the proposed Project development area (including a 200-foot buffer), while the number of oak trees to be preserved within protected areas (*e.g.*, High Country and River Corridor SMAs, the Salt Creek area, proposed spineflower preserves, and Open Area) has been estimated (Impact Sciences 2006B, 2006C, 2006D; Land Design Consultants 2007; RJA 2007; Dudek 2007D). Trees within the proposed development areas within the Specific Plan, VCC, and Entrada planning areas were mapped using a global positioning system (GPS). Tree stands (tree groupings) outside of these areas, in undisturbed or preserved areas, were delineated on aerial images and evaluated in the field *via* a sampling protocol and later statistically analyzed for population estimates.

In proposed development areas (including a 200-foot buffer), trees with minimum trunk diameters (eight inches for single trunks or a combined 12 inches for two stems on a multi-stemmed tree) were inventoried. Additionally, trees with trunks of five inches or larger diameter were recorded from specific areas in consideration of the Oak Woodlands Conservation Act (Pub. Resources Code, § 21083.4), the state law applicable to County oak woodland impact analysis (for counties without an oak ordinance in substantial conformance with the state law). Trees are measured at breast height (4.5 feet or 54 inches above grade). Each tree was evaluated for health, structural qualities, and aesthetic qualities. Dripline radius and the height of the branch at the dripline were also recorded.

Within the High Country SMA and the Salt Creek area, the density of oaks in the oak/grass vegetation communities was estimated from aerial photo interpretation, and the density of oaks in the oak woodland vegetation communities was estimated from a series of random samples within each oak woodland vegetation community. For the random samples, the number of oak trees was counted in the field within several polygons. A regression analysis was used to generate a linear formula relating number of acres to number of trees. The total number of oak

trees within oak woodland vegetation communities was estimated by extrapolating these calculated densities across all oak woodland vegetation communities within the study area that were not surveyed as part of this analysis. Using the density estimates for oak woodlands described above in combination with the aerial photo estimate of oaks in valley oak/grass and individual oak trees mapped in non-oak vegetation communities, the total number of oaks in the High Country SMA and Salt Creek area was estimated.

4.5.3.2.4 Wildlife Surveys

Documentation and determinations of the potential for special-status wildlife species to occur within the Project area have been supported by over 120 surveys completed between 1988 and 2008 by numerous biological consultants, including independent contractors and consulting firms, and have consisted of general, focused, and USFWS protocol-level surveys for a variety of wildlife species. As described in **Subsection 4.5.3.1** (Summary of Literature Review and Biological Studies Conducted in Project Area), prior to the field surveys, a literature review was performed to determine the special-status wildlife species that may be present in the Project area and vicinity and their suitable habitat types. **Table 4.5-6** in **Subsection 4.5.3.1** contains the list of the wildlife surveys completed in the Project area. In addition, the December 2008 Audubon Society Christmas Bird Count data for Castaic Junction (Cooper 2009), which is adjacent to the Project area on Newhall Land property, were reviewed to ensure that the special-status wildlife species database is current and accurate. A concise discussion of the survey components, including the survey methods used for five general taxonomic groups, is presented below. These taxonomic groups, including general guilds within each group, include birds (raptors, riparian, upland), invertebrates (butterflies, general insects, and aquatic mollusks (undescribed snail)), fish, reptiles and amphibians (low mobility ground dwelling and semi-aquatic), and mammals (bats, terrestrial mammals).

4.5.3.2.4.1 *General Wildlife*

General wildlife surveys typically involve general daytime walkover surveys of an area using meandering routes that sample all habitat types in an area and record all observations of species detected directly, visually or by vocalization (call or song), or by diagnostic sign, such as burrows, tracks, scat (fecal pellets), hair and fur, feathers, and bones. Many common or highly detectable species can be observed during general wildlife surveys, but reliable detection of seasonal, nocturnal, or cryptic species usually requires focused surveys conducted under suitable survey conditions, such as a certain time of year, time of day, or specific weather conditions, or using special survey methods, such as trapping or netting.

General wildlife surveys were conducted by RECON and Impact Sciences (1996) in the Specific Plan area and vicinity during spring and summer months. Impact Sciences (1997) conducted studies of upland habitat use by riparian associated bird species and small mammals along the

edge of the Santa Clara River. Dudek conducted general wildlife surveys in the High Country SMA and Salt Creek area in November and late December of 2005 and May through August of 2006 (Dudek and Associates 2006B), the VCC area in September (Dudek and Associates 2006D), and the Entrada area in September 2006 (Dudek and Associates 2006E). The Dudek surveys recorded all wildlife species observed using the various detection methods described above. In addition, many of the other surveys described in **Table 4.5-6** and described below recorded an inventory of all the species, both common and special-status, observed during the surveys. The Dudek surveys (Dudek and Associates 2006B, 2006D, 2006E) also provided evaluations of special-status species that were not observed, but have potential to occur based on existing habitat conditions.

4.5.3.2.4.2 *Invertebrates*

Butterflies. Focused surveys for the San Emigdio blue butterfly (*Plebulina emigdionis*) were conducted throughout the RMDP and Entrada sites in April and May 2004. A total of 64 site visits was completed in these areas in 2004 under suitable survey conditions, including air temperatures ranging from 58°F to 95°F, generally sunny skies, and calm winds (Compliance Biology 2004A, 2004B, 2004C). In April and May of 2005, three site visits for this species were conducted in Salt Canyon, which is within the High Country SMA, and Potrero Canyon, which is in the Specific Plan area of the RMDP (Compliance Biology 2005). Survey conditions included air temperatures ranging from 64°F to 90°F, partly cloudy to sunny skies, and calm winds. These studies also included a general butterfly inventory and a habitat assessment for the quino checkerspot butterfly (*Euphydryas editha quino*), a federally listed endangered species. The butterfly surveys were conducted by Guy P. Bruyea (Bruyea Biological Consulting), an independent butterfly consultant under contract to Compliance Biology with more than 16 years consulting experience and extensive knowledge of the Lepidoptera (butterfly) species expected to occur in the region. The surveys focused on areas where the San Emigdio blue butterfly and quino checkerspot butterfly would be expected to occur based on the presence of host plants, nectar sources, native vegetation communities associated with the host plant, and microhabitat features such as hilltops and ridgelines. An inventory was made of all butterfly species observed during the surveys.

RECON (1999) also conducted a habitat assessment for the quino checkerspot butterfly in early April 1999 in the Specific Plan Phase 1 development area (the northern portion of the Specific Plan area, including the Santa Clara River Valley, Homestead Canyon, Off-Haul Canyon, San Martinez Grande, Mid-Martinez Grande, and Chiquito Canyon). The habitat assessment focused on presence of the host plant dot-seed plantain (*Plantago erecta*) and suitable habitat features, such as ridges, hilltops, and valley bottoms and associated coastal scrub, chaparral, and grassland vegetation communities.

General Insects. A census of general insects in portions of the Project area was compiled by Jones *et al.* (2004) as part of the pollinator study for the SFVS. Because the study was focused on potential SFVS pollinators, observations and sampling were conducted in the vicinity of SFVS populations and thus did not sample the full range of habitat types in the Project area. Observations and sampling were conducted in April and May of 2004. Observations were conducted from dawn to dusk, with all insect visitors to SFVS recorded during the observation period. Sampling was conducted with aspirators, nets, and pitfall traps. Insect information for aquatic habitats was also collected by ACBL (2008) as part of the 2007 annual bioassessment monitoring of the Santa Clara River as part of the pre-discharge monitoring requirements for the Newhall Wastewater Reclamation Plant. Two sampling locations were visited in July 2007 and October 2007 using field protocols and assessment procedures in accordance with the draft Surface Water Ambient Monitoring Program (SWAMP) protocols.

Aquatic Mollusk. Focused surveys for aquatic mollusks have not been completed within the entire Project area. Until the discovery of the undescribed snail at the seep community in Middle Canyon Spring and subsequent observation of the snail in the lower Middle Canyon drainage, there was no indication that potentially sensitive gastropods are present in the Specific Plan area. Comprehensive surveys for the undescribed snail species therefore have not been completed on the Project site to date; therefore, their distribution is unknown beyond Middle Canyon. In 2007, Dudek biologists conducted a site visit to the Middle Canyon Spring as well as the lower reach of the Middle Canyon drainage to document the biotic conditions of the spring area (Dudek 2007C).

4.5.3.2.4.3 *Birds*

More than 65 surveys for avian species have been conducted from 1988 to 2008 along the Santa Clara River, along Castaic Creek, and in upland habitats of the Specific Plan, Entrada, and VCC planning areas (**Table 4.5-6**). Surveys were conducted by multiple permitted and qualified biologists including Daniel Guthrie, Zev Labinger, James Greaves, Pete Bloom, and biologists employed by RECON, Impact Sciences, PCR, Compliance Biology, SAIC, Forde Biological Consultants, and Dudek.

Generally the surveys were conducted on foot, and species were recorded through direct observation of individuals or by identification of calls and songs. Special-status species and active nests and territories were generally documented, if observed, either on aerial or topographic maps or by using a GPS receiver. Because most of the surveys were focused on federally and/or state-listed species, such as the least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher (*Polioptila californica californica*), and thus were

conducted according to USFWS survey protocols from 1992 on (see **Table 4.5-6**), the seasonal and daily timing of the surveys, as well as weather conditions (ambient temperature and wind), were appropriate for detecting most diurnal nesting and breeding birds.

The riparian bird surveys were conducted along both sides of the Santa Clara River within riparian vegetation and included the agriculture fields immediately adjacent to the River. The upland bird surveys were generally conducted within coastal scrub and buckwheat habitats, but also included chaparral, woodland, grasslands, and agriculture areas. With the exception of the winter survey (February 2007) conducted by Bloom Biological, Inc. (2007A), and described in more detail below, the surveys were conducted from the spring to mid-summer (March through July). The daytime surveys generally were conducted between the hours of 5:30 a.m. and 12:00 p.m., when birds are mostly likely to be vocalizing and detectable. Nocturnal surveys were conducted in 2000 (Guthrie 2000A, 2000D), and in 2007 (Bloom Biological 2007A).

Birds—Riparian. Riparian bird surveys have been conducted throughout the Project area since 1988 and comprise the largest component of the bird surveys. These surveys have generally focused on least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo, but all bird species observed during surveys were recorded. Many of these surveys were conducted by Daniel Guthrie from 1988 through 2006 within the portion of the Santa Clara River and Castaic Creek in and adjacent to the Project area boundary. In 1988 and 1989 these surveys focused on least Bell's vireo (two surveys) (Guthrie 1988, 1989, 1990); in 1990 and 1991 these surveys focused on southwestern willow flycatcher and yellow-billed cuckoo in addition to least Bell's vireo (three surveys) (Guthrie 1991A, 1991B); and from 1992 through 2006 Guthrie performed focused surveys for the least Bell's vireo generally following USFWS protocol guidelines, but also focused on observing southwestern willow flycatcher and yellow-billed cuckoo (Guthrie 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C).

Labinger and Greaves conducted surveys in 1994 and 1996 through 1998 within portions of the Santa Clara River corridor (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A). Dudek conducted surveys within Castaic Creek, Salt Creek area, High Country SMA, and portions of the River corridor adjacent to the Project site in 2005 and 2006 (Dudek and Associates 2006B, 2006D, 2006E). Bloom Biological, Inc. conducted surveys within Castaic Creek and the Santa Clara River corridor from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Bloom Biological 2007A).

The surveys by Guthrie from 1988 to 1991 were generally conducted in April, May, and June in the early morning hours (6:00 a.m. to 10:00 a.m.). Suitable habitat was surveyed

for the least Bell's vireo, including southern willow scrub and southern cottonwood–willow riparian forest. Guthrie's surveys from 1992 to 2006 were generally conducted according to USFWS survey protocol guidelines, with some variation in the number of repeated site visits (*e.g.*, six instead of eight visits in 1995) and number of days between visits. The Bloom Biological, Inc. 2007 survey for least Bell's vireo and southwestern willow flycatcher followed USFWS protocol guidelines, was conducted from March through July, and covered the Santa Clara River and its tributaries within and adjacent to the Project site (Bloom Biological, Inc. 2007A).

Birds—Uplands. Surveys for upland bird species were conducted throughout the Project area and in nearby areas between 1995 and 2008. Upland habitats include coastal scrub, chaparral, grassland, and woodland as well as agriculture. Surveys in the Specific Plan area were conducted by a variety of the independent biologists and biological consulting firms listed above and covered the Landmark Village, Mission Village, and Homestead East and West areas as well as Potrero, Long, and Chiquito canyons and the upland habitats along the Santa Clara River (Bloom Biological, Inc. 2007A; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek in 2005 and 2006 (Dudek and Associates 2006B). Upland surveys have also been conducted in the VCC (Dudek and Associates 2006D; Guthrie 2004B) and Entrada areas by Dudek and Guthrie (Dudek and Associates 2006E; Guthrie 2004G). Areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project site on the south and east (Guthrie 2004C) and the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I).

These upland surveys included USFWS protocol surveys for the federally-listed threatened coastal California gnatcatcher and were conducted by USFWS-permitted biologists in various locations in the Project area. Guthrie conducted surveys in 2000 and 2004 in Grapevine Mesa, Airport Mesa, VCC, Homestead, Chiquito Canyon, Long Canyon, Potrero Canyon, and Magic Mountain Entertainment (Entrada) (Guthrie 2000A, 2000B, 2000D, 2004A, 2004B, 2004D, 2004E, 2004G, 2004I). Dudek conducted USFWS protocol surveys within the Mission Village and Landmark Village proposed Project sites in 2007 through January 2008 (Priest 2007B; Lemons 2008). Focused surveys for the coastal California gnatcatcher have also been conducted off site in the Legacy Village area (Guthrie 2004C; Impact Sciences, Inc. 2000; SAIC 2003) and other adjacent off-site areas (Compliance Biology 2003B, 2006A; PCR 1998).

The survey methods for the coastal California gnatcatcher included conducting six or nine (Lemons 2008 only) USFWS protocol presence/absence surveys within suitable

coastal scrub habitat. Surveys were performed in the early morning hours (5:30 a.m. to 12:00 p.m.) between March and January. Surveys were conducted on foot, using both visual and auditory methods (call playback and pishing) to detect birds according to USFWS survey guidelines**.**

Birds—Raptors: Raptor surveys have been conducted by Bloom Biological, Inc. (2007A, 2008, 2009), beginning in late February 2007 and extending into June 2008, including burrowing owl surveys, white-tailed kite nesting and foraging surveys, and other raptor nest surveys. Most surveys were conducted up to one mile out from the Landmark Village project impact area boundary. The white-tailed kite surveys included an approximately 10-mile reach of the Santa Clara River from west of I-5 to Las Brisas Bridge in Ventura County, as well as all lands on Newhall Ranch, including both sides of SR-126, lower Salt Creek, and Potrero Canyon (Bloom Biological 2009). The raptor surveys generally were conducted during daylight hours, as well as up to six hours after sunset, by walking and/or driving systematically along dirt roads, footpaths, streambeds, and canyon bottoms throughout the survey area. Special emphasis was placed on thoroughly surveying all agricultural and abandoned fields, at dusk and dark hours, for presence of burrowing owls. In addition, several nights were spent surveying and camping in selected oak woodlands, in an attempt to detect the presence of long-eared owls. When white-tailed kites were detected foraging or nesting, they were observed for several hours if possible. Although all birds detected were recorded, special emphasis was placed on finding those considered to be of special status by federal and state resource agencies and conservation organizations. GPS waypoint locations were recorded for all special-status species locations. All active raptor nests were monitored throughout the survey period to determine outcome.

4.5.3.2.4.4 *Fish*

Three special-status fish species are known to occur in the Santa Clara River and Castaic Creek within the Specific Plan area: arroyo chub (*Gila orcutti*), Santa Ana sucker (*Catastomas santaanae*), and unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). As described in **Table 4.5-6**, focused fish surveys have been conducted over multiple years since 1988 by various independent biologists and consulting firms to document the presence/absence of special-status fish species within the Project area.

The most recent and comprehensive fish surveys were conducted by ENTRIX (2009) in 2004 and 2005 in the portions of the Santa Clara River and Castaic Creek that occur within the proposed Specific Plan area. The tributary drainages of Salt Canyon, Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Humble Canyon, Lion Canyon, and Middle Canyon were also surveyed. The surveys included habitat assessments and direct fish

sampling using dip nets or a small seine. At certain locations, bank observation was used when direct sampling was not feasible due to lack of access.

The ENTRIX (2009) habitat assessment and surveys focused on the three known special-status species in the area (the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker). The survey and habitat assessment for unarmored threespine stickleback used a modified level-two version of CDFG protocols of the California Salmonid Stream Habitat Restoration Model. The survey reach for the stickleback survey was between Salt Creek Canyon and The Old Road Bridge, within which habitat type, length, mean width, mean and maximum depth, substrate composition, water and air temperature, and percent edgewater vegetation were recorded. All fish species observed in this reach were recorded during these surveys.

Additional surveys for fish species were conducted in 1988, 1995, 2000, 2002, and 2003 (Aquatic Consulting Services 2002A, 2002B, 2002C, and 2002D; Haglund 1989; SMEA (San Marino Environmental Associates) 1995, 2000; Impact Sciences 2003A, 2003B, 2003C, 2003D).

4.5.3.2.4.5 *Reptiles and Amphibians*

Surveys for reptiles and amphibians are separated into two categories—semi-aquatic reptiles and amphibians and terrestrial reptiles—because the life histories of these two groups are distinctly different and require different survey methods.

Semi-Aquatic Reptiles and Amphibians. Semi-aquatic reptiles and amphibians depend on riparian or aquatic resources and terrestrial habitats for at least a portion of their life histories. Semi-aquatic reptiles known or with potential to occur in the Project area include southwestern pond turtle, two-striped garter snake (*Thamnophis hammondii*), and south coast garter snake (*Thamnophis sirtalis*). Semi-aquatic amphibians known or with potential to occur in the Project area include arroyo toad and western spadefoot toad (*Spea hammondii*), and the more aquatic-obligate California red-legged frog (*Rana draytonii*).

Numerous surveys have been conducted for semi-aquatic reptiles and amphibians in the Santa Clara River and Castaic Creek within and in the vicinity of the Project area over multiple years between 1994 and 2007 (**Table 4.5-6**). In most cases, USFWS protocol surveys were conducted for the arroyo toad and other special-status reptiles and amphibians were noted anecdotally, although, as described below, some trapping for southwestern pond turtle and two-striped garter snake was conducted by San Marino Environmental Associates. After 1995, surveys for the arroyo toad were conducted according to USFWS protocol survey guidelines and included at least one senior-level biologist with an arroyo toad federal section 10(a)(1)(A) Recovery Permit or otherwise considered by the USFWS to be qualified to conduct arroyo toad surveys. Focused

surveys were also conducted for western spadefoot toad (Compliance Biology 2004E, 2006C). Surveys were conducted in suitable habitats, including in riparian and aquatic and immediately adjacent terrestrial habitats, on foot during the day in March through June during suitable weather conditions. Nocturnal surveys were also conducted for the arroyo toad per the USFWS survey protocol and western spadefoot toad. These surveys generally rely on visual or auditory (calls) detection of egg masses, tadpoles, metamorphs, juveniles, sub-adults, and adults.

San Marino Environmental Associates (SMEA 1995A) surveyed the Santa Clara River for aquatic species between Castaic Creek and Bouquet Canyon Road Bridge in May 1995. The surveys included nocturnal and diurnal surveys for arroyo toad (pre-1996 non-USFWS protocol), California red-legged frog, and western spadefoot toad, and trapping of southwestern pond turtles and two-striped garter snakes. Aquatic Consulting Services, Inc. (2002A, 2002B, 2002C, 2002D) conducted surveys for aquatic species through daytime walkover surveys from May to September 2000 along the Santa Clara River near the Commerce Center Drive Bridge, Castaic Junction area, and west of the Project area just upstream of the Salt Creek confluence with the River and upstream of the Las Brisas Bridge. Surveys by RECON (1999A), Aquatic Consulting Services (2002A, 2002B, 2002C, 2002D), Nancy Sandburg (2001), Impact Sciences (2001 and 2002), Ecological Sciences (2003A, 2003B, 2003C, 2003D, 2003E, 2003F, 2004A, 2004B, 2004C, 2004D, 2005A), (Compliance Biology 2004D), and Bloom (2007) included focused protocol surveys (except Sandburg 2001) and habitat evaluations for the arroyo toad. Compliance Biology (2004E, 2006C) conducted focused surveys for the western spadefoot toad within Landmark Village and Mission Village areas in March 2004. The focused surveys conducted for specific species also documented all aquatic species observed during the surveys.

In addition, Dudek conducted general wildlife surveys in Entrada (Dudek and Associates 2006E) and Salt Creek (Dudek and Associates 2006B) and recorded observed semi-aquatic species.

Terrestrial Reptiles. Terrestrial reptiles include various snakes and lizards that primarily use dry upland habitats, such as grasslands, coastal scrub, and chaparral, but also may use riparian scrubs, such as alluvial scrub, big sagebrush scrub, and river wash habitats. They may also occur in riparian habitats, but usually when conditions are relatively dry. Common and generally highly visible terrestrial reptiles include gopher snake (*Pituophis melanoleucus*), western rattlesnake (*Crotalus viridis*), coastal western whiptail (*Aspidoscelis tigris stejnegeri*), side-blotched lizard (*Uta stansburiana*), and western fence lizard (*Sceloporus occidentalis*). Other more cryptic or less detectable reptiles include silvery legless lizard (*Anniella pulchra pulchra*), coast horned lizard

(*Phrynosoma coronatum blainvillei*), San Bernardino ringneck snake (*Diadophis punctatus modestus*), and coast patch-nosed snake (*Salvadora hexalepis virgultea*).

Most reptile species, even if present in an area, are difficult to detect because of their thermoregulatory and behavioral (*e.g.*, foraging) patterns and cryptic nature. Most species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators. They may only be observed when disturbed from refugia.

Pitfall trapping is an effective technique for sampling terrestrial reptiles, although its efficacy depends on the species, and some species probably are under-sampled by this method. It may be biased toward highly mobile species or active hunters, such as whipsnakes, and biased against more larger, more sedentary species that are sit-and-wait predators, such as rattlesnakes or those that move beneath the surface, such as the legless lizard. Common anurans that use upland areas, such as western toad (*Bufo boreas*), also may be commonly captured in pitfall traps

Two rounds of pitfall surveys were conducted by Impact Sciences (2006A) within the Mission Village, Landmark Village, Homestead, and Potrero Village development areas. The focus of the surveys was to develop a general understanding of the diversity of reptile species occurring in a variety of habitat types within these areas. The first round occurred from September 29 through October 6, 2004, and the second occurred from August 21 through August 25, 2006. Pitfall trap lines were installed in various habitat types to obtain a representative sample of reptile distribution. The habitat types surveyed included, but were not limited to, California sagebrush scrubs, chaparrals, oak woodland, riparian, and grassland. Five-gallon buckets, used as pitfall traps, were placed at ground level and spaced 40 feet apart along transects made of two-foot-high silt fencing (drift fences). On average, 10 buckets occurred on each transect. Trap lines were surveyed for five consecutive days, and each trap line was checked twice a day, once during the morning hours between 6:00 a.m. and 9:00 a.m. and again between 4:00 p.m. and 6:00 p.m.

A focused survey was also conducted for the silvery legless lizard, a species that is less likely to encounter pitfall traps because of its underground activity. An effective sampling method for the legless lizard is hand raking in suitable habitats, including sandy or loose soils in coastal scrub, chaparral, cottonwood, and oak vegetation communities. Impact Sciences (2006A) conducted hand raking surveys in 10 locations with potential habitat in the Specific Plan area from October 3 through October 7, 2004, in the late

afternoon or early morning in ambient temperatures ranging from 80°F to 90°F. Although early fall is not an optimum time for such surveys because individuals may have been estivating at this time, legless lizards were found, as described in more detail in **Subsection 4.5.5.3**.

General wildlife surveys also recorded any reptile species observed.

4.5.3.2.4.6 *Mammals*

The discussion of mammal surveys is separated into a discussion of bat surveys and terrestrial mammal surveys because of the specialized survey methods used for these two groups.

Bats. Two focused bat surveys were conducted in the Project area by Impact Sciences in 2004 and 2006 (Impact Sciences 2005, Johnson 2006). The 2004 survey used the Anabat II Bat Detector, which converts ultrasonic echolocation signals of bats into audible electronic signatures that, in many cases, can be used to identify the species of bat emitting the signal using standard reference computer programs. The Anabat has limitations, however, because some species are not readily detected by the Anabat Detector and also because signals may be incomplete and only allow identification of frequency ranges that are diagnostic of several bat species. For example, Anabat systems are typically set to detect bat echolocation calls in the 20 to 100 kHz range, and western mastiff bat (*Eumops perotis californicus*) typically emits pulses in the range of 9 to 14 kHz. However, this species is audibly detectable to the human ear and is one of only three California bat species easily detected by the unaided human ear. The Townsend's big-eared bat (*Corynorhinus townsendii*) is typically a high-altitude foraging species, which also can limit its detection with the Anabat Detector. Because of the limitation of the Anabat, mist netting was used in 2006 to capture bats that may not have been reliably identified using the Anabat Detector.

The 2004 acoustic surveys using the Anabat Detector were conducted throughout the Project area in a variety of habitats that could support special-status and common bat species, including coast live oak woodland, riparian, agriculture, mule fat scrub, and grassland. The survey areas included Salt Creek Canyon, Potrero Canyon, Santa Clara River corridor, Homestead Village, Landmark Village, and Mission Village (Impact Sciences 2005). The 2006 surveys using the Anabat Detector, mist netting, and visual/audible detection methods were conducted in Landmark Village, in Potrero Canyon, and near The Old Road (Johnson 2006). The 2006 surveys were conducted both during the daytime and nighttime near roosting sites and in areas where concentrated bat activity was expected, such as streams, hydric areas, ponds, and stock tanks. During the day, structures were visually inspected with the aid of flashlights and spotlights, and the presence of bats was detected based on the presence of bats or their sign (*e.g.*, guano,

urine stains). During the night, surveys consisted of visual observations, capture with mist nets, and acoustic monitoring of free-flying bats.

Terrestrial Mammals. One focused terrestrial mammal assessment and survey was conducted in the Project area by Impact Sciences in 2004 (Impact Sciences 2005). This assessment and survey was designed to collect information for high-mobility species (*e.g.*, mountain lion (*Puma concolor*) and mule deer (*Odocoileus hemionus*)), moderate-mobility species (*e.g.*, American badger (*Taxidea taxus*)), and low-mobility species (*e.g.*, most rodents). Survey methods included camera and scent/track stations and spotlight surveys to detect the high- and moderate mobility species and small mammal live trapping to inventory rodents species throughout the Project area in a variety of habitats. Camera stations were set up in March and April near the Santa Clara River and Chiquito Canyon, west of Grapevine Mesa, and near an agriculture field and along the Santa Clara River near Potrero Mesa. Scent/track stations were set up between March and September in various habitats in canyons, ridges, along agriculture fields, and near the Santa Clara River. The stations were baited, and flour was used to check for tracks. Spotlight surveys were conducted in July through September with two biologists scanning the vegetation while driving slowly along roads throughout the Project area. The small mammal live trapping was conducted from July through September using Sherman live traps, which were placed in all habitat types and were baited with canned cat food, which is appropriate for attracting most small rodents, including the special-status southern grasshopper mouse (*Onychomys torridus ramona*). Thirty-four grids were used with 80 traps per grid, resulting in a total of 13,500 trap nights.

Other general wildlife surveys that recorded mammal observations included those conducted by Dudek in the High Country SMA and Salt Creek area (Dudek and Associates 2006B), Valencia Commerce Center (Dudek and Associates 2006D), and the Entrada area (Dudek and Associates 2006E).

4.5.3.3 Existing Conditions by Project Planning Area

This section provides an overview of the physical and biological conditions present within the RMDP, VCC, and Entrada planning areas; areas designated as Open Area; and the natural areas such as the River Corridor SMA, the High Country SMA, and Salt Creek area.

4.5.3.3.1 RMDP

The RMDP study area is depicted on **Figure 4.5-9**, RMDP/SCP – Landscape Features, along with the proposed open space designations and development areas. The special-status biological areas within this study area encompass the Specific Plan's River Corridor SMA, High Country SMA, Salt Creek area, and Open Area. More detailed information regarding the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area is provided in this subsection, following a general discussion of the RMDP area.

The RMDP study area includes areas north of SR-126 between Chiquito Canyon and the Ventura County line. South of SR-126, the RMDP study area includes areas between Airport Mesa and Salt Creek, including Middle, Humble, Lion, Long, and Potrero canyons. Salt Creek extends south into the High Country SMA and the Salt Creek area.

The RMDP study area is topographically diverse with slope gradients ranging from moderate to steep in the hillsides, to very gentle in the Santa Clara River floodplain and in major tributary canyons. Two large mesas (*e.g.*, Grapevine Mesa and Airport Mesa) are adjacent to the Santa Clara River (**Figure 4.5-9**, RMDP/SCP – Landscape Features). This study area is dominated by east-, west-, and northwest-trending primary ridges, with north- and south-trending secondary ridges. Distinctive ridges in the Specific Plan site include the Sawtooth Ridge, along the northeastern side of Long Canyon, and Ayres Rock, south of Potrero Mesa. Site elevations range from 825 feet above mean sea level (AMSL) in the Santa Clara River bottom at the Ventura County/Los Angeles County line to approximately 3,200 feet AMSL on the ridgeline of the Santa Susana Mountains along the southern boundary.

4.5.3.3.1.1 *Past and Current Land Use.*

Most of the RMDP study area has been subject to various anthropogenic (human-related) disturbances for decades. SR-126 parallels the Santa Clara River, and both Southern California Edison (SCE) and Southern California Gas Company (SCGC) have utility and transmission corridors along the southern portion of the site. The existing utilities and access roads are actively maintained by the SCE and SCGC. Newhall Land has also historically leased, and continues to lease, portions of the RMDP for oil and natural gas production, cattle grazing, and agricultural operations (*e.g.*, food crop production, dryland farming, honey farming). See **Figure 4.5-10**, RMDP/SCP – Ongoing Agricultural, Grazing Practices, and Oil Leases under No

Action/No Project Alternative, for the locations of these land use practices. These ongoing activities have resulted in the degradation or elimination of habitat within portions of the RMDP (*e.g.*, road construction, grazing lots, and oil pad construction) and have affected the types of biological resources that occur in those areas. For example, there are over 30 historical or occupied oil pads between Airport Mesa and Grapevine Mesa that remain cleared of vegetation. Oil pads and their associated access roads are also present within Humble and Potrero canyons. Extensive agricultural practices have been conducted across the RMDP, particularly on Grapevine Mesa, Potrero Mesa, Onion Fields, and within many of the tributary canyons that flow into the Santa Clara River. Both dry land and irrigated agricultural practices have been conducted in Middle, Humble, Long, and Potrero canyons and in portions of Salt Creek canyon. Agricultural operations have long occurred within the alluvial soils bordering the Santa Clara River, and they abut the northern border of the riparian corridor in many areas.

The long-term effects of cattle grazing are apparent in many sections of the RMDP area. Cattle can affect the vegetation community in an area by reducing native vegetation, increasing erosion, and impairing water quality. Extensive grazing can also facilitate the colonization of weedy annual species that quickly become the dominant plant community on site. In Middle and Potrero canyons, cattle remain the dominant foragers within portions of the remaining riparian communities. By grazing on riparian vegetation, cattle may alter the successional pathways of riparian systems and limit the establishment of woody vegetation. Extensive cattle grazing may also "powder out" soft soils that quickly become denuded of vegetation.

Portions of the RMDP site also have been subject to periodic wildfires. Although periodic fires are part of the natural ecosystem, fires burning too frequently can have significant long-term ecological effects, such as degradation of habitat (temporal loss of habitat and non-native plant species invasion) and loss of special-status species. The biodiversity of coastal scrub and chaparral communities is uniquely adapted to low rainfall, rugged topography, and wildfires. However, fires have become more frequent with growth of the human population, creating a situation in which vegetation communities (and, therefore, habitats for plant and animal species) are changed dramatically and may not recover. This change in vegetation community is called "type conversion" and can occur in any native vegetation community. When burned too frequently, vegetation communities are often taken over by highly flammable, weedy, non-native plant species that burn even more often and provide minimal habitat value for native plant and animal species, especially those of special status. The widespread disturbance from the Verdale and Simi wildfires of 2003 is still visible in the RMDP area, primarily within the western and southern portions of the Specific Plan site. The effects of these fires, particularly in areas experiencing grazing pressure, have resulted in type conversion from scrubland to annual grasslands. In 2007, portions of the RMDP near Lion and Exxon canyons were also subject to wildfires.

4.5.3.3.1.2 *Vegetation Communities and Land Covers.*

The broad, alluvial Santa Clara River Valley is botanically diverse, wedged between the Santa Susana Mountains, the Los Padres National Forest, and the Angeles National Forest. Though varied floristic influences exist at the RMDP today, the pre-development vegetation type was probably characterized by various pure stands of riparian, coastal scrub, and chaparral communities. While many sections of the RMDP have been altered and disturbed, the area still supports many high-quality native plant associations found in the ecosystems of the Santa Susana Mountains and the Santa Clara River.

As in much of the Santa Clara River Valley, historical disturbance has altered much of the pre-existing vegetation in the RMDP. The vegetation communities on the RMDP site vary in quality from high-biological-value riparian and upland habitat to highly disturbed land, such as agricultural areas and graded oil well pads (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers). As described above, the long-term management of the RMDP site for agriculture and grazing has led to the establishment of weedy annual species in some areas. Fire and other anthropogenic disturbances have also altered some community types. Upland vegetation communities dominate the landscape within the Specific Plan site, both north and south of the Santa Clara River. The dominant upland vegetation communities include coastal scrub, chaparral, coast live oak woodlands, valley oak woodlands and grasses, California annual grasslands, and big sagebrush scrub. Agriculture also occurs in many upland areas and is bordered by various coastal scrub communities.

Some of the upland areas supporting agricultural practices in the RMDP include Chiquito Canyon, Indian Dunes, Airport Mesa, Middle Canyon, Grapevine Mesa, Potrero Mesa, Onion Fields, Salt Creek Canyon, and areas along SR-126. Depending on the season, these areas may be subject to a variety of crops, including cereal grains, cilantro, cabbage, onions, and sod. At other times these areas are left fallow and may quickly become dominated by common non-native invasive species. Fallow areas are dominated by herbaceous, introduced, pioneering plant species that readily colonize open, disturbed soil and thrive as a result of human impacts.

Airport Mesa has been used for agricultural activities for a number of years, typically for irrigated crops. During the spring of 2008, Airport Mesa was fallow and supported dense populations of weedy annuals, including brome grasses (*Bromus madritensis*, *B. diandrus*, *B. hordeaceus*), barley (*Hordeum* sp.), wild oats (*Avena barbata*, *A. fatua*), and rye grasses. In many locations non-native annual species, such as cheeseweed (*Malva parviflora*) black mustard (*Brassica nigra*), short-podded mustard (*Hirschfeldia incana*), and red-stemmed filaree (*Erodium cicutarium*) comprised the dominant vegetative cover. Wildflowers were also common and included redmaids (*Calandrinia ciliata*), blue dicks (*Dichelostemma capitatum*), California poppy (*Eschscholzia californica*), Lindley's annual lupine (*Lupinus bicolor*), and

various species of phacelia (*Phacelia* spp.). San Fernando Valley spineflower is located to the east, south, and west of Airport Mesa.

To the south of Airport Mesa, Magic Mountain Canyon supports river wash and big sagebrush scrub along the canyon bottom, with adjacent areas supporting coastal scrub and disturbed land. Disturbed land is land that has been recently or repeatedly disturbed by grading or compaction (*e.g.*, dirt roads) and is primarily lacking vegetation. The river wash occurs within the low-flow channel, and it includes sporadic native shrubs, such as Great Basin sagebrush (*Artemisia tridentata*) and scale-broom (*Lepidospartum squamatum*), as well as a variety of herbaceous species, including native herbs such as common eucrypta (*Eucrypta chrysanthemifolia*), wild rhubarb (*Rumex hymenosepalus*), telegraph weed (*Heterotheca grandiflora*), and prickly cryptantha (*Cryptantha muricata*) and non-native herbs such as tree tobacco (*Nicotiana glauca*) and tocalote (*Centaurea melitensis*). The big sagebrush scrub includes native shrubs (Great Basin sagebrush, yerba santa (*Eriodictyon crassifolium*), and California sagebrush (*Artemisia californica*)) as well as herbaceous species, including native plants (such as California aster (*Lessingia filaginifolia*), wild cucumber (*Marah macrocarpus*), shrubby phacelia (*Phacelia ramosissima*), and common owl's clover (*Castilleja exserta*)) and non-native herbs (red-stemmed filaree, tree tobacco, milk thistle (*Silybum marianum*), and horehound (*Marrubium vulgare*))**.** The coastal scrub includes areas that are characterized as heterogeneous scrub as well as areas dominated by California sagebrush, purple sage (*Salvia leucophylla*), and California buckwheat (*Eriogonum fasciculatum*). These coastal scrub vegetation communities also include native shrubs, such as squaw bush (*Rhus trilobata*) and chaparral bush mallow (*Malacothamnus fasciculatus*), and smaller native species, such as blue dicks, deerweed (*Lotus scoparius*), California encelia (*Encelia californica*), California poppy, chaparral nightshade (*Solanum xanti*), chick lupine (*Lupinus microcarpus*), common owl's clover, and California wishbone-bush (*Mirabilis laevis* var. *crassifolia*); non-native herbs, such as short-podded mustard and red-stemmed filaree, are also present.

East and west of Airport Mesa, coastal scrub and California annual grassland are the most common vegetation communities. The coastal scrub includes areas that are characterized as California sagebrush, as well as areas dominated by purple sage and California buckwheat. These coastal scrub vegetation communities also include native shrubs, such as Mexican elderberry (*Sambucus mexicana*), white sage (*Salvia apiana*), California encelia, and coastal prickly-pear (*Opuntia littoralis*); smaller native species, such as deerweed, wild cucumber, chick lupine, California wishbone-bush, silver puffs (*Uropappus lindleyi*), yellow pincushion (*Chaenactis glabriuscula*), slender woolly buckwheat (*Eriogonum gracile var. gracile*), yellow fiddleneck (*Amsinckia menziesii*), and California melic (*Melica imperfecta*); and non-native species (red-stemmed filaree, tocalote, and tree tobacco). In addition to non-native grasses (bromes, wild oat, and goldentop (*Lamarckia aurea*)), California annual grassland includes a variety of native herbaceous species, such as blue dicks, yellow fiddleneck, silver puffs,

Lindley's annual lupine, angel gilia (*Gilia angelensis*), strigose deerweed (*Lotus strigosus*), and slender pectocarya (*Pectocarya linearis*), and non-native species, including red-stemmed filaree and milk thistle. San Fernando Valley spineflower is present within the coastal scrub and California annual grassland vegetation communities to the north, east, and south of Airport Mesa.

Grapevine Mesa, although typically in active, irrigated agricultural use, was fallow in the spring of 2008 and also supported weedy herbaceous annual plant communities. Most of Grapevine Mesa was dominated by cheeseweed, red-stemmed filaree, short-podded mustard, London rocket (*Sisymbrium irio*), and California bur-clover (*Medicago polymorpha*). Russian thistle (*Salsola tragus*), milk thistle, and horehound were also present. San Fernando Valley spineflower is located to the east and west of Grapevine Mesa.

To the east of Grapevine Mesa, Lion Canyon runs along a northwest/southeast trending line and is a tributary to the Santa Clara River. Lion Canyon supports a variety of vegetation communities, including river wash and big sagebrush scrub along the canyon bottom with coast live oak woodland, coastal scrub, and chaparral along the canyon slopes. The river wash includes scattered native shrubs, such as scale-broom and mulefat (*Baccharis salicifolia*), and smaller herbaceous species, such as yellow pincushion, butterweed (*Senecio flaccidus* var. *douglasii*), deerweed, silver puffs, lacy phacelia (*Phacelia tanacetifolia*); non-native herbaceous plants are also present, including common groundsel (*Senecio vulgaris*), lamb's-quarters (*Chenopodium album*), and tocalote. The big sagebrush scrub includes native shrubs (Great Basin sagebrush, squaw bush, and scale-broom) but also includes a variety of native herbaceous species, such as blue fiddleneck (*Phacelia distans*), wild rhubarb, globe gilia (*Gilia capitata*), angel gilia, annual burweed (*Ambrosia acanthicarpa*), California fluffweed (*Filago californica*), and rusty popcorn flower (*Plagiobothrys canescens*), and non-native plants, including bull thistle (*Cirsium vulgare*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and Russian thistle. In addition to coast live oak trees (*Quercus agrifolia*), the coast live oak woodland includes a variety of native herbaceous species, including blue fiddleneck, chaparral nightshade, American bowlesia (*Bowlesia incana*), California goosefoot (*Chenopodium californicum*), blue dicks, wild cucumber, globe gilia, and angel gilia, and non-native plants (tocalote, red-stemmed filaree, common chickweed (*Stellaria media*), and tree tobacco). The coastal scrub includes areas that are characterized as heterogeneous scrub as well as areas dominated by coastal sagebrush and California buckwheat. These coastal scrub vegetation communities also include native shrubs, such as purple sage, Great Basin sagebrush, and Our Lord's candle (*Yucca whipplei*); smaller native plants, such as California wishbone-bush, yellow pincushion, California dodder (*Cuscuta californica*), lacy phacelia, long-stem golden yarrow (*Eriophyllum confertiflorum*), common forget-me-not (*Cryptantha intermedia*), and common owl's clover; and non-native plants (red-stemmed filaree, short-podded mustard, and horehound). The chaparral includes native shrubs (squaw bush, golden currant (*Ribes aureum*), mainland cherry, and California

buckwheat); native herbaceous species, such as blue dicks, yellow pincushion, California poppy, sacapellote (*Acourtia microcephala*), lacy phacelia, angel gilia, California peony, yellow fiddleneck; and non-native herbaceous species (tocalote and red-stemmed filaree).

To the west of Grapevine Mesa, Humble Canyon supports river wash and coast live oak woodland along the canyon bottom (and along unnamed tributaries to Humble Canyon), and chaparral and California annual grassland along the canyon slopes. The river wash includes scattered native shrubs, such as goldenbush (*Isocoma menziesii*) and mulefat, and smaller native species, such as Lindley's annual lupine, lacy phacelia, deerweed, common forget-me-not, mustard primrose (*Camissonia californica*), and common eucrypta, as well as the non-native milk thistle. In addition to coast live oak trees, the coast live oak woodland includes native shrub and herbaceous plants, such as goldenbush, Great Basin sagebrush, common owl's clover, California aster, yellow fiddleneck, wild cucumber, elegant clarkia (*Clarkia unguiculata*), miner's lettuce (*Claytonia perfoliata*), wild pea (*Lathyrus vestitus*), Parry's larkspur (*Delphinium parryi*), and California mugwort (*Artemisia douglasiana*), and non-native herbaceous species, such as hedge mustard (*Sisymbrium officinale*), common sow-thistle (*Sonchus oleraceus*), and goose grass (*Galium aparine*). In addition to non-native grasses, such as bromes and wild oat, the California annual grassland is populated by a variety of herbaceous species, including native plants (common owl's clover, California poppy, rusty popcorn flower, Lindley's annual lupine, chick lupine, silver puffs, and yellow fiddleneck) and non-native plants (short-podded mustard, yellow sweet-clover (*Melilotus indica*), Russian thistle, and tocalote). The chaparral includes native shrubs, such as squaw bush, chamise (*Adenostoma fasciculatum*), chaparral bush mallow, and mountain mahogany (*Cercocarpus betuloides*); and smaller, more herbaceous native species, such as California wishbone-bush, Lindley's annual lupine, California poppy, rusty popcorn flower, whispering bells (*Emmenanthe penduliflora*), globe gilia, sacapellote, and redmaids; non-native herbaceous species are also present, including short-podded mustard, red-stemmed filaree, and Russian thistle.

Onion Fields, located at the mouth of Long Canyon on a terrace above the Santa Clara River, is maintained as an irrigated sod farm. Additional agricultural areas extend up into Long Canyon; left fallow in 2008, these agricultural areas are dominated by many of the same weedy annual herbaceous plants described for Airport Mesa and Grapevine Mesa. Long Canyon supports a variety of vegetation communities, including river wash and big sagebrush scrub along the canyon bottom with coast live oak woodland, coastal scrub, and chaparral along the canyon slopes. The river wash includes scattered native plants (scale-broom, yellow fiddleneck, common forget-me-not, mustard primrose, common eucrypta, annual burweed, yellow pincushion, and sun cup (*Camissonia hirtella*)). The big sagebrush scrub includes native plants (Great Basin sagebrush, whispering bells, lacy phacelia, strigose deerweed, Coulter's lupine (*Lupinus sparsiflorus*), common owl's clover, blue dicks, lastarriaea (*Lastarriaea coriacea*), wild cucumber, and wild rhubarb) and non-native plants (yellow sweet-clover, common sow-thistle,

and tumble mustard (*Sisymbrium altissimum*)). The coastal scrub includes areas that are characterized as heterogeneous scrub as well as areas dominated by coastal sagebrush, black sage (*Salvia mellifera*), and purple sage. These coastal scrub vegetation communities also include native shrubs, such as California encelia, giant rye grass (*Leymus condensatus*), bush monkeyflower (*Mimulus aurantiacus*), and chaparral bush mallow; smaller native plant species, such as common eucrypta, blue dicks, granny's hairnet (*Pterostegia drymarioides*), shrubby phacelia, California dodder, and cliff malocothrix (*Malacothrix saxatilis*); and non-native herbaceous species, including yellow sweet-clover, short-podded mustard, and red-stemmed filaree. The chaparral includes densely vegetated areas that are characterized as heterogeneous chaparral as well as areas dominated by chamise chaparral. These chaparral vegetation communities also include additional native shrubs, such as squaw bush, chaparral bush mallow, prickly phlox (*Leptodactylon californicum*), and mountain mahogany; smaller native plant species, such as heart-leaf penstemon (*Keckiella cordifolia*), common forget-me-not, California butterweed (*Senecio californicus*), white snapdragon (*Antirrhinum coulterianum*), California goosefoot, and California peony; and non-native herbaceous species (red-stemmed filaree).

Potrero Mesa, located above and between Ayers and Potrero canyons, also supports various agricultural practices. Fallow in the spring of 2008, this area is also dominated by many of the same weedy herbaceous annuals described for the Airport and Grapevine mesas, but also includes small populations of non-native plants (shepherd's purse (*Capsella bursa-pastoris*) and common sow thistle) as well as native wildflowers, such as Lindley's annual lupine, California poppy, and yellow fiddleneck.

A small narrow ridge bisects the northwest portion of Potrero Mesa. Both the narrow ridge and the surrounding terrain support coastal scrub and California annual grassland. The coastal scrub includes areas that are characterized as heterogeneous scrub, as well as areas dominated by coastal sagebrush and black sage. These coastal scrub vegetation communities also include native shrubs, such as purple sage, California sagebrush, squaw bush, Mexican elderberry, giant ryegrass, California encelia, and coyote brush (*Baccharis pilularis*); smaller native plants, such as arroyo lupine (*Lupinus succulentis*), yellow fiddleneck, California melic, sacapellote, Santa Barbara locoweed (*Astragalus trichopodus*), chaparral nightshade, and California aster; and non-native annuals, such as winter vetch (*Vicia villosa*), red-stemmed filaree, tocalote, and common sow-thistle. In addition to non-native grasses, such as bromes and wild oat, the California annual grassland is populated by a variety of herbaceous species, including native plants (California poppy, arroyo lupine, western jimson weed (*Datura wrightii*), yellow fiddleneck, and Indian tobacco (*Nicotiana quadrivalvis*)) and non-native plants (cheeseweed (*Malva parviflora*), Russian thistle, tree tobacco, prickly sow-thistle (*Sonchus asper*), and Mediterranean canary grass (*Phalaris minor*)).

Potrero Canyon, a tributary to the Santa Clara River, is connected to the High Country SMA through Windy Gap at the downstream end and through Via Canyon at the upstream end. Potrero Canyon has been substantially altered over the years through oil agricultural operations. Virtually all of the flat and gently sloping areas along the canyon bottom have been actively disked on an annual basis, and oil platforms, distribution centers and associated dirt roads are actively maintained. These activities account for the substantial areas mapped as agriculture and disturbed land within the canyon. Through many years of cattle grazing, large expanses of California grassland have become intermixed with the agriculture and disturbed land. As described above, disturbed land is land that has been recently or repeatedly disturbed by grading or compaction, and is primarily lacking vegetation. The California annual grassland includes native wildflower species, such as arroyo lupine, yellow fiddleneck, California poppy, California aster, and California fuchsia, and non-native weedy species, such as milk thistle, short-podded mustard, red-stemmed filaree, and shepherd's purse. A narrow riparian corridor hugs the northeast slope of the canyon. Based on a review of topographic maps and visual observations, it appears that the riparian corridor may have been more centrally located in the channel bottom, prior to the long-time agricultural operations. The upper reaches of Potrero Canyon Creek include river wash and big sagebrush scrub. The middle reaches include narrow bands of southern willow scrub, mulefat scrub, and southern cottonwood–willow riparian forest. The lower reaches include cismontane alkali marsh, coastal and valley freshwater marsh, and patches of mulefat scrub, southern willow scrub, shrub tamarisk, Mexican elderberry scrub, and southern cottonwood–willow riparian forest. River wash supports scattered native herbaceous plants, including chia (*Salvia columbariae*), western jimson weed, California fluffweed, southern sun cup (*Camissonia bistorta*), and common forget-me-not, and non-native plants, such as short-podded mustard, tree tobacco and red-stemmed filaree. Big sagebrush scrub includes native shrubs (Great Basin sagebrush and quail brush (*Atriplex lentiformis*)); smaller native plants, such as cocklebur (*Xanthium strumarium*); and non-native plants, such as Australian saltbush (*Atriplex semibaccata*), milk thistle, and tocalote. Mulefat scrub includes native shrubs (mulefat, quail brush, and coyote brush); smaller native species, such as cocklebur, western ragweed (*Ambrosia psilostachya*), California mugwort (*Artemisia douglasiana*), and wild heliotrope (*Heliotropium curassavicum*); and non-native species, such as cheeseweed, yellow sweet-clover, and tamarisk (*Tamarix ramosissima*). Southern willow scrub includes native trees and shrubs (arroyo willow (*Salix lasiolepis*), quail brush, mulefat, coyote brush, and giant ryegrass); and non-native species, such as yellow sweet-clover, tamarisk, short-podded mustard, and cheeseweed. Shrub tamarisk is dominated by tamarisk but also includes scattered native plants (coyote brush and mulefat) and the non-native short-podded mustard. Mexican elderberry scrub includes Mexican elderberry shrubs as well as an understory of non-native plants, such as milk thistle, short-podded mustard, and tree tobacco. Southern cottonwood–willow riparian forest supports an overstory of Fremont cottonwood (*Populus fremontii*) and arroyo willow; native shrubs, such as Great Basin sagebrush, quail brush, giant creek nettle (*Urtica dioica*), and

mulefat; native herbaceous species, such as wild cucumber; and non-native plants (Italian thistle (*Carduus pycnocephalus*), horehound, and milk thistle). The cismontane alkali marsh in Potrero Canyon is an herbaceous community dominated by salt grass (*Distichlis spicata*); the higher elevations and edges support native plants (yerba mansa (*Anemopsis californica*), western ragweed, and spearscale (*Atriplex triangularis*)) and non-native plants (yellow sweet-clover, five-hooked bassia (*Bassia hyssopifolia*), and peppergrass (*Lepidium latifolium*)). Where water is actually flowing in small rills at the surface, winged three-square (*Scirpus americanus*) and Mexican rush (*Juncus mexicanus*) also occur. Coastal and valley freshwater marsh supports native herbaceous species, such as broad-leaved cattail (*Typha latifolia*) and winged three-square, with native plants (yerba mansa and western ragweed) and non-native plants (wild celery (*Apium graveolens*) and rabbit's-foot grass (*Polypogon monspeliensis*)) occurring at the fringes.

The steeper portions of Potrero Canyon include coastal scrub areas that are characterized as heterogeneous scrub, as well as areas dominated by California sagebrush and purple sage. These coastal scrub vegetation communities also include native shrub species, such as white sage, Great Basin sagebrush, and chaparral bush mallow; smaller native plants, such as coastal lotus (*Lotus salsuginosus*), California peony, chick lupine, whispering bells, silver puffs, and California aster; and non-native herbaceous plants, such as milk thistle, yellow sweet-clover, and tocalote. Valley oak grassland is also present at higher elevations on the south side of the downstream end of the canyon. In addition to the scattered valley oak (*Quercus lobata*) trees and non-native grasses, such as bromes and wild oat, this vegetation community includes an understory of native herbaceous species, such as miner's lettuce, California fuchsia, common owl's-clover, yellow fiddleneck, blue dicks, common lomatium (*Lomatium utriculatum*), and chaparral nightshade, and non-native herbaceous species, such as common chickweed, short-podded mustard, black mustard, and common sow-thistle. Coast live oak woodland occurs in the upper reaches of the canyon and includes an overstory of coast live oak, with native shrubs (Mexican elderberry and yerba santa) and smaller native plants, such as miner's lettuce, long-stem golden yarrow, common eucrypta, common owl's-clover, Pacific sanicle (*Sanicula crassicaulis*), and California melic, and non-native herbaceous plants, such as hedge mustard, goose grass, horehound, and cheeseweed.

Chiquito Canyon lies primarily to the north of SR-126 and supports agriculture areas along the flatter portions of the canyon bottom, on either side of the incised creek, on the east side of Chiquito Canyon Road. The incised creek supports a pocket of southern cottonwood–willow riparian forest at the upstream end of the creek, and the remaining portions of the creek include river wash and big sagebrush scrub. The southern cottonwood–willow riparian forest includes a canopy of Fremont cottonwood trees, as well as native shrubs and trees, such as mulefat, Mexican elderberry, arroyo willow, and red willow (*Salix laevigata*); native herbaceous species, such as California mugwort and broad-leaved cattail; and non-native plants, such as tree tobacco.

The river wash supports scattered native plants, including scale-broom, Great Basin sagebrush, lacy phacelia, chaparral nightshade, globe gilia, sun cup, and woolly star (*Eriastrum densifolium*), and non-native species, such as abumashi grass (*Schismus barbatus*), tree tobacco, castor-bean (*Ricinus communis*), and horehound. The big sagebrush scrub supports native shrubs (Great Basin sagebrush, yerba santa, mulefat, and coyote brush); smaller native species, including lacy phacelia, arroyo lupine, wild rhubarb, Coulter's lupine, and yellow pincushion; and non-native species, including winter vetch, tree tobacco, and red-stemmed filaree. The steeper canyon sides include coastal scrub areas that are characterized as heterogeneous scrub, as well as areas dominated by California buckwheat, black sage, and purple sage. These coastal scrub vegetation communities also include native shrub species, such as yerba santa, California sagebrush, California encelia, giant ryegrass, and Mexican elderberry; native wildflowers (blue dicks, yellow fiddleneck, arroyo lupine, southern sun cup, chaparral nightshade, and lacy phacelia); and non-native species (short-podded mustard). Several south-facing slopes are dominated by chamise chaparral, which supports native shrubs, including chamise, black sage, giant rye grass, bladderpod (*Isomeris arborea*), California buckwheat, hoaryleaf ceanothus (*Ceanothus crassifolius*), and toyon (*Heteromeles arbutifolia*); smaller native species, such as deerweed, California peony, sacapellote, wild cucumber, California wishbone-bush, and California aster; and non-native species, such as short-podded mustard and black mustard.

San Martinez Grande Canyon lies to the west of Chiquito Canyon, primarily north of SR-126. The incised creek supports a pocket of southern cottonwood–willow riparian forest at the upstream end of the creek, and the remaining portions of the creek include river wash, mulefat scrub, and big sagebrush scrub. The southern cottonwood–willow riparian forest supports a canopy of Fremont cottonwood trees as well as other native trees and shrubs, such as arroyo willow, red willow, coyote brush, and mulefat, and non-native plants, such as yellow sweet-clover. The river wash supports scattered native plants (scale-broom, whispering bells, yellow fiddle-neck, annual burweed, and salt grass) and non-native plants (tree tobacco, yellow sweet-clover, and red-stemmed filaree). The big sagebrush scrub supports native shrubs (Great Basin sagebrush, quail brush, and Mexican elderberry); smaller native species, including chaparral nightshade, common forget-me-not, blue fiddleneck, globe gilia, and whispering bells; and non-native plants (black mustard, tocalote, and cheeseweed). Mulefat scrub supports native shrubs (mulefat and coyote brush); smaller native species, such as yellow fiddleneck; and non-native plants (tamarisk and yellow sweet-clover). The steeper canyon sides include coastal scrub areas that are characterized as heterogeneous scrub, as well as areas dominated by California buckwheat, black sage, and purple sage. These coastal scrub vegetation communities also include native shrub species, such as California sagebrush, coyote brush, giant ryegrass, and Mexican elderberry; smaller native species, including chaparral nightshade, morning-glory (*Calystegia macrostegia*), coast paintbrush (*Castilleja affinis*), mustard primrose, and arroyo lupine; and non-native plants (short-podded mustard and tree tobacco). Most of the west side of San Martinez Grande Canyon was burned in the 2003 fires, and the California sagebrush scrub is

still recovering (*i.e.*, stump sprouting). Extensive expanses of California annual grassland are also present. In addition to non-native grasses, such as bromes and wild oats, the grasslands support native wildflowers (such as arroyo lupine, yellow fiddleneck, California poppy, common forget-me-not, and annual burweed) and non-native herbaceous plants (including London rocket, black mustard, bull thistle, milk thistle, and common sow-thistle).

The quality of native upland habitats in the RMDP area is varied and includes a range of conditions. The assessment of habitat quality may be dependent upon a number of factors, including the successional stage of the community, the topography, the historical level of disturbance (*e.g.*, grazing, oil production), and the recent fire ecology. Although the quality of habitat in some areas is degraded, it is important to note that numerous sensitive and common plant and wildlife species have been recorded in the RMDP area. For example, scrub communities adjacent to some riparian areas have been extensively grazed by cattle and the dominant native plants occur within a mosaic of non-native species. This is evident in sections of Lion, Long and Potrero canyons. Conversely, classic stands of coastal scrub and other upland plant communities occur throughout the RMDP area. For example, large stands of relatively undisturbed coastal scrub were identified near Onion Fields, Potrero Canyon, Long Canyon, and near the Salt Creek area.

The Santa Clara River and some of its tributary waters support a variety of riparian vegetation communities, including southern cottonwood–willow riparian forest, southern willow scrub, mulefat scrub, arrow weed scrub, alluvial scrub, herbaceous wetlands, coastal and valley freshwater marsh, and river wash. These communities represent the many successional stages that occur in riverine ecosystems. The ecological integrity of riparian systems in the southwest United States is related to disturbance, regeneration, and competition (Busch and Smith 1995). Flooding and regular scour—both regular occurrences in this section of the Santa Clara River—are forms of disturbance to which many plant and animal species are well adapted, and they are often required for the development of suitable nesting or breeding habitat for some species (Busch and Smith 1995). Many riparian species, such as cottonwoods and willows (which dominate much of the riparian habitat in the RMDP area), require periodic disturbance from scour to provide suitable sites for seedling germination (Mahoney and Rood 1998). Although still subject to periodic flooding and scour, the Santa Clara River ecosystem has been affected by the construction of dams on some of the River's major tributaries, including Castaic and Piru creeks.

Depending on the location of the river, habitat conditions can be considered excellent, with well-established multi-canopy southern cottonwood–willow riparian forest along the upper terraces of the Santa Clara River (*i.e.*, along both the north and south sides of the River at Mayo Crossing, along the north side of the River between the mouth of Chiquito Canyon and the mouth of San Martinez Grande, along the north side of the River at Indian Dunes, and along the

south side of the River at the mouth of Middle Canyon). Non-native, invasive species, such as giant reed (*Arundo donax*) and tamarisk, are present as occasional components along the River, and both giant reed and tamarisk occur in several concentrated clumps in the River, upstream of the confluence with Castaic Creek.

As described above in the canyon descriptions, tributary drainages that include portions of San Martinez Grande, Chiquito, Middle, Potrero, and Long canyons also support localized populations of riparian vegetation. Surface water flows in the tributary drainages are ephemeral in nature, with the exception of the lower portions of Potrero Canyon, where groundwater discharges to the creek. These drainages support several plant associations, including cismontane alkali marsh, river wash, mulefat scrub, big sagebrush scrub, and alluvial scrub. Both dry land and irrigated agricultural practices have been conducted in or adjacent to some of the drainages in Middle, Humble, Long, Potrero, and portions of Salt Creek canyons; and most of the drainages in the RMDP have been subject to periodic grazing by livestock. For the most part, the creeks in these canyons are restricted to a thin ribbon of riparian vegetation adjacent to agricultural land. Cattle are typically present and herbaceous understory vegetation is limited.

4.5.3.3.1.3 *Open Space within the RMDP*

The Specific Plan Land Use Plan designates a total of approximately 5,182 acres for the River Corridor and High Country SMAs (**Figure 4.5-3**, RMDP Study Area). The River Corridor SMA is generally 1,500 to 2,000 feet wide and is located along the north and south sides of the Santa Clara River. The High Country SMA is located in the southern portion of the Specific Plan site. The SMAs are designed primarily to protect the existing natural resources within Los Angeles County's Significant Ecological Areas (SEAs), SEA 20 and SEA 23. Limited public access through the SMAs would be provided by the trail system to be developed, consistent with the Specific Plan Master Trails Plan.

The 977-acre River Corridor SMA includes the Santa Clara River within the Specific Plan site and associated habitats. The value of the River Corridor SMA is derived from the inherent value of its wetland and riparian habitats and associated species, and from its function as a regional east-west wildlife corridor.

The largest land use designation of the Newhall Ranch Specific Plan Land Use Plan is the 4,205-acre High Country SMA. The High Country SMA is located in the southern portion of the site and includes oak savannahs, high ridgelines, and various canyon drainages, including the Salt Creek watershed in Los Angeles County. Salt Creek is a regionally significant wildlife corridor that provides an important habitat link to the Santa Clara River.

As part of its approval of the Specific Plan in 2003, the Los Angeles County Board of Supervisors imposed an off-site condition requiring the applicant to dedicate to the public the

remaining 1,517-acre portion of the Salt Creek watershed in Ventura County, adjacent to the western boundary of the Specific Plan site. Although the Salt Creek area was identified as an off-site area during the Specific Plan approval process by Los Angeles County, the area is within the RMDP boundary, and is considered on site for purposes of this plan.

The two SMAs (River Corridor and High Country), and other important preserve/conservation areas (Salt Creek area and Open Area) on and adjacent to the Specific Plan site, are summarized below.

River Corridor SMA. The 977-acre River Corridor SMA comprises a portion of the County's SEA 23 and would include the preservation of areas along the Santa Clara River, a regionally significant biological resource. As part of the development of the Specific Plan, the River Corridor SMA has been delineated to be sufficiently wide to handle the capital flood while retaining nearly all of the riparian vegetation existing along the River. **Figures 4.5-12** through **4.5-15** show the biological resources present within the River Corridor SMA.

The Santa Clara River and other riparian resources in the Southwestern United States have been subject to ongoing disturbance from human activities. Urban development, stream channelization, dam construction, and water diversion have played a significant role in the loss of riparian habitat statewide. In some circumstances, these actions have resulted in the deterioration and loss of riparian plant communities (Howe and Knopf 1991). For example, in California, 95% to 97% of riparian habitats that were present prior to European settlement have been severely degraded or destroyed (Smith 1977; Katibah 1984; Faber *et al.* 1989).

In the Project area, the River is routinely subject to ongoing human disturbance related primarily to agriculture, the augmentation of flows from the Santa Clarita Water Treatment Plant, and urban development. Earth and culvert stream crossings occur at several locations, including Humble and Potrero canyons, and agricultural fields abut the river at many locations. These locations often result in the formation of standing ponds, which provide suitable breeding habitat for exotic species, including African clawed frogs (*Xenopus laevis*) and mosquitofish (*Gambusia affinis*). Routine discharges from the wastewater treatment plant further alter the natural dynamics of the River by alternatively raising and lowering the water surface elevation of the River. This can have adverse effects on numerous species, by washing away egg masses or by stranding fish in temporary pools.

The construction of SR-126 and the establishment of residential and agricultural communities including Travel Village, a recreational vehicle campground and storage facility near Commerce Center Drive, have also affected the River.

The Santa Clara River is also considered an important riparian corridor that connects the Specific Plan area with habitat to the east and west. The Santa Clara River flows from its origins in the San Gabriel Mountains to where it eventually empties into the Pacific Ocean, approximately 50 miles to the west. The River Corridor SMA is an important migration and genetic dispersion corridor for many wildlife species, including aquatic taxa; riparian obligate species (resident and migratory); and larger, more mobile terrestrial animals.

Special-Status Species. The River Corridor SMA supports a variety of state- and federally listed endangered species and numerous special-status plant and wildlife species. Some of the special-status species identified as occurring along the River include arroyo toad, black-crowned night-heron, Cooper's hawk, and least Bell's vireo. Northern harrier, white-tailed kite, willow flycatcher, yellow warbler, yellow-breasted chat, and yellow-headed blackbird have also been identified. As many portions of the RMDP support perennial water, several aquatic or semi-aquatic species have been observed, including arroyo chub, Santa Ana sucker, unarmored threespine stickleback, southwestern pond turtle, and two-striped garter snake. Three special-status plants have been recorded in the River Corridor SMA: an undescribed everlasting, an undescribed sunflower, and slender mariposa lily. See **Table 4.5-6** in **Subsection 4.5.3.1**, Summary of Literature Review and Biological Studies Conducted in Project Area, for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

Implementation of the RMDP has the potential to result in construction- and development-related disturbance to portions of the Santa Clara River. To minimize or reduce these effects, the RMDP provides for "transition" or buffer areas between the River and development, restricts recreational uses in the River, and provides for the long-term management of the River Corridor SMA and floodplain areas. Riparian ecosystems in the southwestern United States are highly dynamic and have adapted to a predictable cycle of disturbance resulting from winter rainfall and spring snowmelt. Streams form a steady state condition or "dynamic equilibrium" between dramatic, short-lived bursts of change. Floodplains constitute the buffer that allows streams the flexibility for these bursts. By definition, floodplains and riparian systems are active depositional and erosional environments, prone to floods and shifting materials, storing excess sediments at times of low water and providing sediments in floods. In addition to the physical processes of rivers, there are biological and biogeochemical processes that work to shape the ecosystem as a whole. In addition, many species utilize riparian buffer or transition areas for critical life history events, such as breeding or aestivation. The use of buffers and the placement of the project outside of the Capital Flood event would

ensure the protection of riparian habitat and minimize effects to sensitive biological resources within the Santa Clara River.

Vegetation Communities and Land Covers. Vegetation community classifications used in this RMDP follow the "Vegetation Classification and Mapping Program List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003; Dudek and Associates 2006B, 2006C, 2006D). Southern cottonwood–willow riparian forest and river wash comprise the majority of the land in the River Corridor SMA, with 32.6% and 20.6%, respectively. In addition, many other plant associations are present in the Santa Clara River and occur in various states of succession, depending on their proximity to the active channel and the recent cycles of rainfall and scour. **Table 4.5-13** shows the distribution of vegetation communities/land cover types in the River Corridor SMA.

In addition to the main river channel, several dry secondary channels meander across the width of the floodplain. Some of these channels flow in response to periodic water releases from the local wastewater treatment facility located upstream of the RMDP. In some areas, non-native grasses and elements of coastal scrub have colonized these dry, sand-dominated channels. Small populations of alluvial scrub species, such as California buckwheat, yerba santa, scale broom (*Lepidospartum squamatum*), and cudweed aster (*Lessingia* sp.), occur in the riparian scrub community.

Depending on the timing of the year or the location on the River, the active channel may be very narrow and limited to only a few feet in width. Conversely, winter storms often inundate many of the existing river terraces for several days. Where perennial water is present, thick mats of water speedwell (*Veronica anagallis-aquatica*), willow weed (*Polygonum lapathifolium*), and water cress (*Rorippa nasturtium-aquaticum*) occur. During the dry season, river wash—consisting of the non-perennial portion of the active channel area and the secondary channels—contains scattered native species, such as scale-broom, chia, California fluffweed, western ragweed, mulefat, golden aster (*Heterotheca sessiliflora*), butterweed, California croton (*Croton californicus*), and miniature sun cup (*Camissonia micrantha*), and non-native plants (blessed thistle (*Cnicus benedictus*), abumashi, and red-stemmed filaree). During the rainy season, the river wash may contain flowing water for several consecutive days or months. The adjacent herbaceous wetlands include thick stands of juvenile native shrubs, including mulefat, narrow-leaved willow (*Salix exigua*), arrow weed (*Pluchea sericea*); native herbaceous species, such as broad-leaved cattail, sedges (*Carex* spp.), cocklebur, California cottonweed (*Epilobium ciliatum*), and bulrush (*Scirpus* ssp.); and non-native plants, including whorled dock (*Rumex conglomerates*), curly dock (*Rumex crispus*), and pepperweed. Where adjacent terraces are low, mulefat scrub is supported, as well as

southern willow scrub and southern cottonwood–willow riparian forest in various successional states, ranging from emerging to mature. Mulefat scrub includes native shrubs, such as mulefat, Great Basin sagebrush, quail brush, and giant ryegrass; smaller native plants, including yellow fiddleneck and western ragweed; and non-native plants (winter vetch, cheeseweed, and yellow sweet-clover). The southern willow scrub includes red willow, arroyo willow, and Goodding's black willow (*Salix gooddingii*) trees; native shrubs, including mulefat, narrow-leaved willow, and arrow weed; native herbaceous species, including western ragweed, arroyo lupine, yellow fiddleneck, and caterpillar phacelia (*Phacelia cicutaria* var. *hispida*); and non-native plants (white sweet-clover (*Melilotus alba*), tumble mustard, hedge mustard, and milk thistle).

In the project area, large galleries of mature cottonwood and willows and their associated herbaceous understory occur at several locations. Some of the largest pure stands of southern cottonwood–willow riparian forest occur along both the north and south sides of the River at Mayo Crossing, along the north side of the River between the mouth of Chiquito Canyon and the mouth of San Martinez Grande, along the north side of the River at Indian Dunes, and along the south side of the River at the mouth of Middle Canyon. These stands occur in areas that have been outside the major scour zone for many years. These areas are dominated by multi-canopied forests with dense thickets of understory vegetation, including native species such as juvenile willows, mulefat, California rose (*Rosa californica*), horseweed (*Conyza canadensis*), California mugwort, western ragweed, and giant creek nettle. Non-native herbaceous species, such as white sweet-clover, prickly sow-thistle, and brome grasses, are associated with the margins of these forests.

Arrow weed scrub and big sagebrush scrub occur within the River Corridor SMA at higher elevations along the floodplain. The arrow weed scrub is dominated by the native shrub arrow weed, but it also supports native shrubs such as mule fat and California sagebrush; native herbaceous species, such as chaparral nightshade, common eucrypta, caterpillar phacelia, and western ragweed; and non-native species, such as tamarisk, yellow sweet-clover, red-stemmed filaree, horehound, and short-podded mustard. The big sagebrush scrub supports native shrubs (Great Basin sagebrush and scale-broom), as well as native herbaceous species, such as mustard primrose, sun cup, California fluffweed, dwarf stonecrop (*Crassula connata*), slender woolly buckwheat (*Eriogonum gracile*), and slender pectocarya and non-native plants (abumashi, red-stemmed filaree, and yellow sweet-clover).

Non-native, invasive species, such as giant reed and tamarisk, are present as occasional components along the River and throughout the river valley, and both giant reed and

tamarisk occur in several concentrated clumps in the River, upstream of the confluence with Castaic Creek.

A complete description of the plant communities present in the RMDP Project area is described in **Subsection 4.5.3.4.1**, Vegetation Communities and Land Cover Types.

Table 4.5-13
River Corridor SMA Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	9.4	1.0%
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	22.3	2.3%
			California sagebrush–*Artemisia californica*	0.4	<0.1%
			California sagebrush–purple sage	31.4	3.2%
		California sagebrush–California buckwheat scrub	Not mapped to association level	0.1	<0.1%
		California sagebrush scrub–undifferentiated chaparral	Not mapped to association level	2.6	0.3%
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	1.5	0.2%
Broad Leafed Upland Tree Dominated	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	16.1	1.6%
Riparian and Bottomland Habitat	Other Riparian/Wetland	Herbaceous wetland	Not mapped to association level	182.2	18.6%
		River wash	Not mapped to association level	201.1	20.6%
		Big sagebrush scrub	Not mapped to association level	2.7	0.3%
		Giant reed	Not mapped to association level	5.6	0.6%
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	12.6	1.3%
		Mulefat scrub	Not mapped to association level	15.0	1.5%
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	13.1	1.3%
		Tamarisk scrub and woodland	Shrub tamarisk	2.3	0.2%
		Coast live oak forest and woodland	Southern coast live oak riparian forest	0.6	0.1%

Table 4.5-13
River Corridor SMA Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	318.5	32.6%
Man-Made Land Cover Types		Agriculture	NA	101.8	10.4%
		Disturbed land	NA	37.1	3.8%
		Total		976.4	100.0%

NOTE: The acreages and vegetation types depicted in this table were determined during field mapping in 2006 (Dudek and Associates 2006B).

Soils. Soils in the River Corridor SMA are mapped as the Mocho-Sorrento association, within a 2% to 9% slope. Because the mapping was done at a generalized level, there are areas within the SMA with lesser slopes and other soil types that were not mapped. These soils are gently sloping to moderately sloping alluvial fans with brown to grayish-brown loam. Erosion hazard is slight to moderate, and the runoff rate is slow to medium (USDA 1969).

High Country SMA. The Newhall Ranch High Country SMA is located in an unincorporated portion of the Santa Clara River Valley on the north slopes of the Santa Susana Mountains (**Figure 4.5-16**, High Country SMA and Salt Creek Area – Generalized Vegetation Communities and Land Covers, and **Figure 4.5-17**, High Country SMA and Salt Creek Area – Special-Status Species Occurrences). Site elevations range from 800 feet AMSL in the Santa Clara River bottom in Ventura County to approximately 3,500 feet AMSL on the ridgeline of the Santa Susana Mountains along the southern boundary. This study area is dominated by rugged terrain, with the main feature being a south-to-north drainage area for Salt Creek and its associated tributaries. The High Country SMA is a part of the County's SEA 20, and the value of the habitats within the area are increased by their continuity and connectivity with the large areas of undeveloped and recently acquired public land in the Santa Susana Mountains, which are also part of SEA 20. As noted by the Penrod *et al.* (2006) least cost analyses, the High Country SMA is an important component of regional habitat connectivity for a variety of species, including a number of special-status species. The High Country SMA also provides live-in habitat for a number of special-status species.

Special-Status Species. The High County SMA supports a variety of state- and federally listed endangered species and numerous special-status plant and wildlife species. Rocky outcrops and soft friable soils support populations of reptiles, such as coastal western whiptail and coast horned lizard. Birds are common in the High Country SMA and include white-tailed kite, Cooper's hawk, loggerhead shrike, prairie falcon, long-eared owl, short-eared owl, and rufous-crowned sparrow. Access to a wide prey base of small mammals and mule deer ensure the presence of wide-ranging carnivores, such as mountain lion and American badger. Several species of plants have also been identified in this area and include slender mariposa lily, Plummer's mariposa lily, late-flowered mariposa lily, and Ojai navarretia. See **Table 4.5-6** in **Subsection 4.5.3.1** for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

While much of the High Country SMA is considered open space and supports a variety of native and exotic vegetation, Newhall Land continues to lease portions of the High Country SMA for oil and natural gas production, cattle grazing, and agricultural

operations (*e.g.*, food crop production, dryland farming, honey farming). Grazing activities and oil and natural gas production have had a noticeable effect on much of the natural habitat on site. Scrub vegetation communities in some areas have been displaced by California annual grassland as a result of grazing and wildfires. In addition, SCE and SCGC maintain transmission and distribution lines within the site.

Vegetation Communities and Land Covers. The High Country SMA supports both native and naturalized habitats that are representative of those found in this region. Similar to the RMDP area, upland habitats dominate the landscape within the High Country SMA. The major upland vegetation communities include coastal scrub, undifferentiated chaparral, coast live oak woodland, valley oak/grass, and California annual grassland. More than half of the coastal scrub and chaparral vegetation communities in the High Country SMA were burned in the 2003 fires, but these areas appear to be recovering (*i.e.*, stump sprouting, natural recruitment of native shrub and herbaceous species). The coastal scrub includes native shrubs (California sagebrush, purple sage, goldenbush, yerba santa, coyote brush, California buckwheat, squaw bush, and chaparral bush mallow); smaller native plants, including California wishbone-bush, redmaids, California aster, chaparral nightshade, California poppy, yellow fiddleneck, blue dicks, and deerweed; and non-native plants (horehound, red-stemmed filaree, and cheeseweed). In some areas, heavy grazing has left only remnant populations of coastal scrub communities dominated by California sagebrush and isolated California buckwheat. Non-native annual grasses are common in these areas, as are herbaceous weedy annuals such as short-podded mustard, milk thistle, and tocalote. The chaparral supports sugar bush (*Rhus ovata*), squaw bush, coyote brush, bush monkeyflower, giant ryegrass, yerba santa, prickly phlox, and poison oak (*Toxicodendron diversilobum*); native herbaceous species, including Santa Barbara locoweed (*Astragalus trichopodus*), wild pea (*Lathyrus vestitus*), blue dicks, wind poppy (*Stylomecon heterophylla*), valley clover (*Trifolium willdenovii*), climbing bedstraw (*Galium porrigens*), arroyo lupine, long-stem golden yarrow, and cliff malocothrix; and non-native plants (tree tobacco, black mustard, cheeseweed, and horehound). In addition to non-native grasses, the California annual grassland includes native wildflowers (arroyo lupine, blue dicks, Johnny jump-ups (*Viola pedunculata*), California aster, and blue fiddleneck) and non-native plants (horehound, short-podded mustard, tocalote, tree tobacco, Russian thistle, and milk thistle).

Because much of the High Country SMA contains slopes greater than 25%, there remains good quality habitat that has been subject to less grazing pressure. Large areas of the High Country SMA support various forms of coast live oak and valley oak/grass and woodlands and there are an estimated 13,732 oak trees within the High Country SMA. The coast live oak woodland supports a canopy of coast live oak trees and native shrubs

(yerba santa, coyote brush, chaparral bush mallow and squaw bush); smaller native species, including heart-leaf penstemon, chaparral nightshade, common eucrypta, California aster, caterpillar phacelia, morning-glory, blue dicks, and wild cucumber; and non-native plants (yellow sweet-clover, short-podded mustard, and red-stemmed filaree). The valley oak/grass supports valley oak trees with an understory of non-native grasses, including bromes and slender oak, as well as native herbaceous species, including yellow fiddleneck, blue dicks, arroyo lupine, California goosefoot, coast paintbrush, and shrubby phacelia, and non-native plants (milk thistle, cheeseweed and bull thistle). These communities provide important mast crops (acorns) to foraging wildlife, such as mule deer, and potential nest sites for native birds. However, acorns are also favored by cattle as are young oak trees. In areas where grazing pressure is high, the recruitment of juvenile oaks may suffer.

Within the High Country SMA, Salt Creek supports a variety of riparian vegetation communities. These areas are near the top of the watershed and occur in many of the steep-walled canyons and broad drainages that ultimately flow into the Santa Clara River. Except where more perennial or long-term intermittent flow occurs, most of these plant communities support species that can survive periods of limited water availability. Some of these communities include river wash, mulefat scrub, big sagebrush scrub, and Mexican elderberry scrub. The river wash supports scattered native shrubs, such as quail brush and mulefat; native herbaceous species, including Santa Barbara locoweed, cocklebur, wild heliotrope and western ragweed; and non-native plants (short-podded mustard, tocalote, and tamarisk seedlings). The mulefat scrub is dominated by mulefat but also supports other smaller, native species, including common forget-me-not, western ragweed, and California mugwort, and non-native plants (horehound, milk thistle, and tree tobacco). The big sagebrush scrub is dominated by Great Basin sagebrush, but also includes other native plants, such as purple sage, shrubby phacelia, Santa Barbara locoweed, California sagebrush, caterpillar phacelia, and California aster, and non-native plants (yellow sweet-clover, short-podded mustard, and milk thistle). The Mexican elderberry scrub is dominated by Mexican elderberry but also includes other native shrubs, such as Great Basin sagebrush and goldenbush; native herbaceous species, such as yellow fiddleneck, blue dicks, and rusty popcorn flower; and non-native plants (nettle-leaved goosefoot (*Chenopodium murale*), horehound, and tree tobacco).

In more mesic areas, cismontane alkali marsh, bulrush–cattail wetland, and southern willow scrub occur. The cismontane alkali marsh includes native herbaceous species (salt grass, beardless wild rye (*Leymus triticoides*), and winged three-square) and also includes the non-native yellow sweet-clover. The bulrush–cattail wetland is dominated by winged three-square and broad-leaved cattail, with salt grass occurring along the margins. Occasional mulefat seedlings were observed in both the cismontane alkali

marsh and the bulrush–cattail wetland. The southern willow scrub includes a canopy of arroyo willow, with an understory of native shrubs, including mulefat and Mexican elderberry; native herbaceous species, including California mugwort, western ragweed, shrubby phacelia, and yerba de chiva (*Clematis ligusticifolia*); and the non-native milk thistle.

Near the top of Salt Creek, oak dominated canyons support dense understories of chaparral currant (*Ribes malvaceum*), bladder pod, squaw bush, poison oak, American bowlesia and California hedge parsley (*Yabea microcarpa*). Climbing bedstraw, chaparral nightshade, wild cucumber, and annual non-native grasses are also common. In some areas, California black walnut woodlands border the drainages. An abandoned olive grove occurs near a small sulfur spring near the headwaters of Salt Creek. Seeps and springs in the region also support isolated populations of wetland vegetation and are subject to grazing pressure where they occur.

Table 4.5-14 shows the acreage of vegetation communities and land cover types in the High Country SMA; these areas are mapped on **Figure 4.5-16**, High Country SMA and Salt Creek Area – Generalized Vegetation Communities and Land Covers.

Soils. Soils in the High Country SMA are mapped as Balcom-Castaic-Saugus association, 30% to 50% slopes, eroded (USDA 1969). As mentioned earlier, the mapping was done at a generalized level, so there are areas within the High Country SMA with lesser slopes and other soil types that were not mapped. Balcom-Castaic-Saugus association, 15% to 30% slopes, and small areas of San Andreas and San Benito soils may also be found within the High Country SMA (USDA 1969).

Soils found on site are characterized generally by steep to very steep, often eroded slopes. The soils are well drained, with moderate to moderately slow subsoil permeability and medium to very rapid runoff. The erosion hazard is moderate to very high, largely dependent on slope steepness (USDA 1969).

Table 4.5-14
High Country SMA Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	465.0	11.1%
	Native Grassland	Purple needlegrass	Not mapped to association level	0.6	<0.1%
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	437.0	10.4%
			Burned California sagebrush scrub	784.8	18.7%
			California sagebrush–*Artemisia californica*	0.3	<0.1%
			California sagebrush–purple sage	84.1	2.0%
		California sagebrush scrub–undifferentiated chaparral	Burned California sagebrush scrub–undifferentiated chaparral	5.2	0.1%
		Coyote brush scrub	Not mapped to association level	2.2	<0.1%
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	537.1	12.8%
			Burned undifferentiated chaparral scrub	831.2	19.8%
	Chaparral with Oak	Scrub oak chaparral	Not mapped to association level	0.2	<0.1%
Broad Leafed Upland Tree Dominated	Upland Walnut Woodland and Forest	California walnut woodland and forest	California walnut woodland	6.8	0.2%
	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	446.7	10.6%
		Mixed oak woodland and forest	Not mapped to association level	74.2	1.8%
		Valley oak forest and woodland	Valley oak woodland	47.8	1.1%
			Valley oak/grass	300.3	7.1%
Bog and Marsh	Marsh	Bulrush–cattail wetland	Not mapped to association level	1.4	<0.1%
		Cismontane alkali marsh	Not mapped to association level	3.3	0.1%
Riparian and Bottomland Habitat	Other Riparian/Wetland	River wash	Not mapped to association level	33.3	0.8%
		Alluvial scrub	Not mapped to association level	0.5	<0.1%
		Big sagebrush scrub	Not mapped to association level	8.5	0.2%
	Low to High	Mexican elderberry	Not mapped to association level	3.2	0.1%

Table 4.5-14
High Country SMA Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
	Elevation Riparian Scrub	Mulefat scrub	Not mapped to association level	14.1	0.3%
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	4.3	0.1%
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	0.9	<0.1%
Man-Made Land Cover Types		Agriculture	NA	59.8	1.4%
		Disturbed land	NA	52.7	1.3%
		Total		4205.5	100.0%

NOTE: The acreages and vegetation types depicted in this table were determined during field mapping in 2006 (Dudek and Associates 2006B).

Salt Creek Area. The Salt Creek watershed encompasses approximately 5,816 acres. Of this total, approximately 1,517 acres of the watershed are within the Salt Creek area; the rest of the watershed is included in the High Country SMA. The Salt Creek area includes the western portion of the watershed in Ventura County (**Figure 4.5-16**, High Country SMA and Salt Creek Area – Generalized Vegetation Communities and Land Covers, and **Figure 4.5-17**, High Country SMA and Salt Creek Area – Special-Status Species Occurrences). As noted in the Penrod *et al.* (2006) least cost analyses, the Salt Creek area, in conjunction with the High Country SMA, is an important component of regional habitat connectivity for a variety of species, including a number of special-status species. The Salt Creek area also provides live-in habitat for a number of special-status species.

Special-Status Species. The Salt Creek area supports a variety of state- and federally listed endangered species and numerous special-status plant and wildlife species. Short-eared owl, loggerhead shrike, white-tailed kite, Cooper's hawk, rufous-crowned sparrow, and prairie falcon have all been observed foraging on site. Mountain lion tracks have been observed along the dirt roads within the Salt Creek area. In addition, two special-status plants have been recorded in the Salt Creek area: Ojai navarretia and slender mariposa lily. See **Table 4.5-6** in **Subsection 4.5.3.1** for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

The majority of the Salt Creek area is considered open space and supports a variety of native and non-native vegetation; however, Newhall Land continues to lease portions of the Salt Creek area for cattle grazing and agricultural operations (*e.g.*, food crop production, dryland farming, honey farming). Grazing activities have had a noticeable effect on some of the natural habitat on site. Scrub vegetation communities in some areas have been displaced by California annual grassland as a result of grazing and wildfires. In addition, SCE and SCGC maintain transmission and distribution lines within the site.

Vegetation Communities and Land Covers. The Salt Creek area supports both native and naturalized habitats that are representative of those found in the region. **Table 4.5-15** shows the vegetation communities/land cover types within the Salt Creek area. Native upland habitat comprises the majority of the Salt Creek area, with 630 acres (41.5%) covered in coastal scrub. Mixed chaparral and coast live oak woodland encompass 125 acres (8.2%) and 148 acres (9.7%) within the Salt Creek area, respectively. The majority of the coastal scrub and chaparral vegetation communities in the Salt Creek area were burned in the 2003 fires, but these areas appear to be recovering (*i.e.*, stump sprouting, natural recruitment of native shrub and herbaceous species). The coastal scrub includes native shrubs (California sagebrush, California encelia, deerweed, long-stem buckwheat (*Eriogonum elongatum*), Mexican elderberry, and coyote brush); smaller native plants, including wide-throated yellow monkey flower (*Mimulus brevipes*), common owl's

clover, cliff malocothrix, morning glory, and narrow-leaved bedstraw (*Galium angustifolium*); and non-native plants (horehound, cheeseweed, and tocalote). In some areas, the combination of grazing and wildfires has left only remnant populations of coastal scrub communities dominated by California sagebrush and isolated California buckwheat. Non-native annual grasses are common in these areas, as are herbaceous weedy annuals, such as short-podded mustard, milk thistle, and tocalote. The chaparral supports squaw bush, coyote brush, giant ryegrass, yerba santa, and poison oak; native herbaceous species, including blue dicks, long-stem golden yarrow, and cliff malocothrix; and non-native plants (tree tobacco, black mustard, and cheeseweed). Because of wildfires, much of the chaparral has only stump-sprouting shrubs and is dominated by the herbaceous native and non-native species. In addition to non-native grasses, the California annual grassland includes native wildflowers (rusty popcorn flower, blue dicks, California aster, coyote-melon (*Cucurbita foetidissima*), yellow fiddleneck, and blue fiddleneck) and non-native plants (horehound, short-podded mustard, tocalote, and Russian thistle).

Large areas of the Salt Creek area support various forms of coast live oak and valley oak/grass and woodlands, and there are an estimated 5,640 oak trees within the Salt Creek area. The coast live oak woodland supports a canopy of coast live oak, with scattered shrubby poison oak and Mexican elderberry; native herbaceous species, including California maiden-hair (*Adiantum jordani*), American bowlesia, fiesta flower (*Pholistoma auritum*), California hedge parsley, poison sanicle (*Sanicula bipinnata*), California goldenrod (*Solidago californica*), and miner's lettuce; and non-native plants (yellow sweet-clover and milk thistle). In addition to valley oak trees, valley oak woodland and valley oak/grass support native shrubs (Mexican elderberry and coyote brush); native herbaceous species, including fiesta flower, wild cucumber, common forget-me-not, yellow fiddleneck, common eucrypta, and arroyo lupine; as well as non-native plants (shepherd's purse, milk thistle, cheeseweed, and non-native grasses).

Within the Salt Creek area, Salt Creek supports a variety of riparian vegetation communities, including river wash, Mexican elderberry, mulefat scrub and southern willow scrub. As Salt Creek occurs in both the High Country SMA and the Salt Creek area, the constituents of these vegetation communities are described above in the High Country SMA vegetation communities descriptions.

Table 4.5-15
Salt Creek Area Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	187.9	12.4%
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	11.8	0.8%
			Burned California sagebrush scrub	615.5	40.6%
			California sagebrush–purple sage	2.1	0.1%
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	9.1	0.6%
			Burned undifferentiated chaparral	115.5	7.6%
Broad Leafed Upland Tree Dominated	Upland Walnut Woodland and Forest	California walnut woodland and forest	California walnut woodland	20.4	1.3%
	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	148.0	9.8%
		Mixed oak woodland and forest	Not mapped to association level	94.6	6.2%
		Valley oak forest and woodland	Valley oak woodland	23.9	1.6%
			Valley oak/grass	113.4	7.5%
Riparian and Bottomland Habitat	Other Riparian/Wetland	River wash	Not mapped to association level	7.4	0.5%
		Alluvial scrub	Not mapped to association level	0.4	<0.1%
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	0.7	<0.1%
		Mexican elderberry	Not mapped to association level	1.4	0.1%
		Mulefat scrub	Not mapped to association level	20.1	1.3%
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	2.5	0.2%
		Tamarisk scrub and woodland	Shrub tamarisk	0.2	<0.1%
Man-Made Land Cover Types		Agriculture	NA	99.1	6.5%
		Disturbed land	NA	43.9	2.9%
		Total		**1,517.9**	100.0%

NOTE: The acreages and vegetation types depicted in this table were determined during field mapping in 2006 (Dudek and Associates 2006A).

Soils. Soils in the Salt Creek area are similar to those of the High Country SMA and are mapped as Balcom-Castaic-Saugus association, 30% to 50% slopes, eroded. Soils also are mapped as Gaviota rocky sandy loam and Gazos silty clay loam (USDA 1969).

Soils found on site are characterized generally by steep to very steep, often eroded slopes (*i.e.*, 15% to 75% slopes). The soils are well drained, with moderate to moderately slow subsoil permeability and medium to very rapid runoff. The erosion hazard is moderate to very high, largely dependent on slope steepness (USDA 1969).

Open Area. Open Area is a land use designation, which includes a total of approximately 3,420 acres outside of the SMAs, including 1,921 acres which would be preserved to protect significant resources. The areas also will provide open area and community identification for Newhall Ranch residents. The Open Area designation includes community parks, prominent ridges, bluffs, slopes, creek beds, and utility and trail system easements and will often function as a transition between development areas and the SMAs (**Figure 4.5-18**, Open Area – Generalized Vegetation Communities and Land Covers, and **Figure 4.5-19**, Open Area – Special-Status Species Occurrences).

Included in the Open Area are:

- Community parks;
- Major drainages, which are those with flows of 2,000 cubic feet per second or more;
- Significant landforms, such as the river bluffs, Sawtooth Ridge, and Ayres Rock;
- Spineflower conservation areas;
- Oak woodlands and grasses that are not part of the SMAs; and
- Cultural sites.

Within the RMDP, the Open Area includes portions of Potrero Canyon, Humble Canyon, Lion Canyon, San Martinez Canyon, and Chiquito Canyon as well as areas adjacent to Potrero Mesa, Grapevine Mesa, and Airport Mesa. These areas are known to support a variety of special-status species.

Special-Status Species. Based on surveys conducted between 2002 and 2007, special-status wildlife species identified within the preserved portion of the Open Area include California horned lark, Lawrence's goldfinch, least Bell's vireo, Nuttall's woodpecker, rufous-crowned sparrow, southwestern pond turtle, two-striped garter snake, unarmored threespine stickleback, western spadefoot toad, white-tailed kite, willow flycatcher, yellow warbler, arroyo chub, Santa Ana sucker, western burrowing owl, tricolored blackbird (colony), Cooper's hawk, golden eagle, loggerhead shrike, and oak

titmouse (**Figure 4.5-19**, Open Area – Special-Status Species Occurrences). No special-status plant species were identified within the preserved portion of the Open Area. See **Table 4.5-6** in **Subsection 4.5.3.1** for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

While the Open Area supports a variety of native and non-native vegetation, Newhall Land continues to lease the mesas and many of the canyons for oil and natural gas production, cattle grazing, and agricultural operations (*e.g.*, food crop production, dryland farming, honey farming). As described above, grazing activities and oil and natural gas production have had a noticeable effect on much of the natural vegetation on site, and SCE and SCGC continue to maintain transmission and distribution lines within the Open Area.

Vegetation Communities and Land Covers. Open Area is configured to protect significant landforms and natural resources, providing an opportunity to integrate the proposed development within its natural context. **Table 4.5-16** provides an overview of the vegetation communities that would be preserved in the Open Area (**Figure 4.5-18**, Open Area – Generalized Vegetation Communities and Land Covers). The vegetation communities preserved include mostly a mixture of grassland, coastal scrub, chaparral scrub, and woodlands. Also present are riparian and wetland communities and disturbed land covers which may be available for restoration. Within the RMDP, the Open Area includes portions of Potrero Canyon, Humble Canyon, Lion Canyon, San Martinez Canyon, and Chiquito Canyon as well as areas adjacent to Potrero Mesa, Grapevine Mesa, and Airport Mesa. The constituent elements of the vegetation communities in these areas, as well as the nature and intensity of past disturbances, are described above. Significant additional biological resources, as yet to be calculated, will be part of the Open Area following project grading and re-establishment of several drainages with restored native plant community treatments as discussed in Section 5.3 of the RMDP.

Table 4.5-16
Open Area (Preserved Portion) Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	537	28.0%
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	356	18.5%
			Burned California sagebrush scrub	44	2.3%
			California sagebrush–*Artemisia californica*	26	1.3%
			California sagebrush–purple sage	80	4.1%
			Disturbed California sagebrush–purple sage	4.5	0.2%
		California sagebrush–black sage scrub	California sagebrush–black sage	87	4.6%
		California sagebrush–California buckwheat scrub	Not mapped to association level	149	7.8%
		California sagebrush scrub–undifferentiated chaparral	Not mapped to association level	42	2.2%
		Coyote brush scrub	Not mapped to association level	0.3	<0.1%
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	164	8.5%
			Burned undifferentiated chaparral	4.1	0.2%
	Chaparral with Chamise	Chamise chaparral	Not mapped to association level	32	1.7%
			Burned chamise chaparral	<0.1	<0.1%
	Chaparral with Oak	Scrub oak chaparral	Not mapped to association level	1.3	0.1%
Broad Leafed Upland Tree Dominated	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	82	4.3%
		Valley oak forest and woodland	Valley oak woodland	2.9	0.2%
			Valley oak/grass	27	1.4%
Bog and Marsh	Marsh	Cismontane alkali marsh	Not mapped to association level	4.2	0.2%
		Fresh–brackish water marsh	Coastal and valley freshwater marsh	0	0
Riparian and Bottomland Habitat	Other Riparian/Wetland	Herbaceous wetland	Not mapped to association level	0.7	<0.1%
		River wash	Not mapped to association level	16.6	0.9%
		Big sagebrush scrub	Not mapped to association level	8.2	0.4%

Table 4.5-16
Open Area (Preserved Portion) Vegetation Communities/Land Cover

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	Percent of Total
		Big sagebrush scrub	Big sagebrush–California buckwheat	0.4	<0.1%
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	0.3	<0.1%
		Mexican elderberry	Not mapped to association level	0.7	<0.1%
		Mulefat scrub	Not mapped to association level	2.9	0.2%
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	0.1	<0.1%
		Tamarisk scrub and woodland	Shrub tamarisk	0	0
		Coast live oak forest and woodland	Southern coast live oak riparian forest	<0.1	<0.1%
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	17	0.9%
Man-Made Land Cover Types		Agriculture	NA	105	5.4%
		Developed land	NA	0.3	<0.1%
		Disturbed land	NA	126	6.6%
		Total		1,921	100.0%

NOTE: The acreages and vegetation types depicted in this table were determined during field mapping in 2006 (Dudek and Associates 2006A).

4.5.3.3.2 VCC Planning Area

The VCC planning area is depicted on **Figure 4.5-3**, along with the proposed open space designations and development areas. The VCC planning area is located north of SR-126, east of Commerce Center Drive, and west of I-5. The VCC planning area is dominated by north/south trending ridges that lie north of Castaic Creek, near the confluence with Hasley Canyon. The ridges are generally rounded at the top with slopes that vary from steep to gentle. Portions of two major drainages, including Castaic Creek and Hasley Canyon, occur within the VCC planning area. Site elevations range from approximately 1,000 feet AMSL in the Castaic Creek bottom to just over 1,100 feet AMSL at the top of the north central ridge. Castaic Creek is tributary to the Santa Clara River, the confluence of which is located southwest of the VCC planning area, on the south side of SR-126.

4.5.3.3.2.1 *Past and Current Land Use*

The Project applicant historically leased portions of the VCC planning area for sand and gravel production, cattle grazing, and agricultural operations (*e.g.*, food crop production, dry land farming); only agricultural operations are ongoing. Approximately 7% of the VCC planning area has been developed with commercial/industrial uses. There is significant development influence within the VCC study area, including I-5, SR-126, and secondary roads to the west and east; medium-density residential housing to the north; and major commercial land uses immediately to the west and east of the VCC planning area. Additionally, direct disturbances, primarily from existing overhead and buried utilities, dirt roads, and included widespread soil disturbance, have resulted in non-native plant colonization. Immediately to the west of Livingston Avenue, a significant amount of soil erosion has occurred, presumably resulting from the installation of a large concrete drainage pipe. Hasley Canyon, a tributary of Castaic Creek, contains the majority of disturbance, most likely from excessive scouring. Along Hasley Canyon, near the confluence with Castaic Creek, there is an energy dispersing outfall structure from the upstream channelization and bank stabilization.

4.5.3.3.2.2 *Vegetation Communities and Land Covers*

Vegetation communities on the VCC planning area vary in quality from high biological value to highly disturbed land associated with existing development and former sand/gravel production (see **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers). Native and naturalized vegetation communities present are representative of those vegetation communities found in the Santa Susana, Topatopa, and Liebre mountains and the Santa Clara River and Castaic Creek ecosystems. The dominant upland vegetation community is California annual grassland, with agriculture and coastal scrub also prevalent. In addition to non-native annual grasses, the California annual grassland supports a variety of native wildflowers, including coast goldfields (*Lasthenia californica*), Lindley's annual lupine, common owl's-clover, California poppy, California chicory (*Rafinesquia californica*), redmaids, silver puffs, California lotus

(*Lotus wrangelianus*), and Peirson's morning glory, and non-native plants (pineapple weed (*Chamomilla suaveolens*), California burclover, and common sow-thistle). The coastal scrub is dominated by California sagebrush and California buckwheat scrub and includes other native shrubs, such as deerweed, white sage, purple sage, and our Lord's candle; native herbaceous species, including silver puffs, blue dicks, California wishbone-bush, California fluffweed, Turkish rugging (*Chorizanthe staticoides*), prickly cryptantha, granny's hairnet, slender pectocarya, and dwarf stonecrop; and non-native plants (abumashi, common sow-thistle, and cheeseweed). Castaic Creek supports the majority of southern cottonwood–willow riparian forest on site, with a small remnant of this vegetation community located at the southern terminus of Hasley Canyon. The remaining riparian area supports river wash. The southern cottonwood–willow riparian forest supports a canopy of Fremont cottonwood and arroyo willow trees, with an understory of Mexican elderberry, narrow-leaved willow, scale-broom, tamarisk, and giant reed; native herbaceous species, including prickly cryptantha, western jimsonweed, yellow fiddleneck, Santa Barbara locoweed, and common eucrypta; and non-native herbaceous species (yellow sweet-clover, abumashi, and tree tobacco). The river wash supports scattered native shrubs, including scale-broom, yerba santa, mulefat, and deerweed; native herbaceous species (wild heliotrope, California fluffweed, western ragweed, and mustard primrose); and non-native plants (tamarisk, giant reed, curly dock, and abumashi). On the north side of the site, in an area of heavy disturbance, there is a small depression occupied by herbaceous wetlands and a ditch that supports mulefat scrub. The herbaceous wetlands are dominated by curly dock, and the mulefat scrub is dominated by mulefat with herbaceous native plants (arroyo lupine and California chicory) and non-native plants (horehound, tocalote, yellow sweet-clover and short-podded mustard). The agricultural areas on site are regularly leased for irrigated farming, and the disturbed land on site is primarily denuded of vegetation through repeated scraping and/or stockpiling of construction materials.

4.5.3.3.2.3 *Soils*

Soils on site include: Castaic-Balcom silty clay loam (30% to 50% slopes); Cortina sandy loam (0% to 2% slopes); Hanford sandy loam (2% to 9% slopes); Metz loam (2% to 5% slopes); Mocho loam (0% to 2% slopes); Mocho loam (2% to 9% slopes); Saugus loam (30% to 50% slopes); Sorrento loam (2% to 5% slopes); Yolo loam (0% to 2% slopes); and Yolo loam (2% to 9% slopes) (USDA 1969).

4.5.3.3.2.4 *Special-Status Species*

Based on surveys conducted between 1994 and 2007, special-status wildlife species identified within the VCC planning area include Cooper's hawk, willow flycatcher, tricolored blackbird colony, least Bell's vireo, white-tailed kite, yellow warbler, Nuttall's woodpecker, California gnatcatcher, and two-striped gartersnake (**Figure 4.5-6**, RMDP/SCP – Special-Status Wildlife Species Occurrences). The following special-status plant species were identified within the VCC

planning area: San Fernando Valley spineflower, slender mariposa lily, Peirson's morning glory, mainland cherry, California black walnut, coast live oak, and undescribed everlasting. See **Table 4.5-6** in **Subsection 4.5.3.1** for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

4.5.3.3.3 Entrada Planning Area

The Entrada planning area is depicted on **Figure 4.5-3**, along with the proposed open space designations and development areas. The Entrada planning area is located west of The Old Road and I-5, south of Six Flags Magic Mountain Amusement Park, and north of Stevenson Ranch. The Entrada planning area consists of two pieces separated by a portion of the RMDP study area (the Magic Mountain Parkway extension footprint). The southern portion of the Entrada planning area is dominated by several north/south trending ridges and contains native and non-native vegetation communities and land covers. The northern portion of the Entrada planning area consists primarily of disturbed land; this area is immediately adjacent to the Six Flags Magic Mountain Amusement Park fireworks discharge area and is routinely mowed and scraped for fire suppression purposes. Site elevations range from approximately 1,000 feet AMSL along the Santa Clara River to approximately 1,550 feet AMSL on the ridges in the southwestern portion of the site.

4.5.3.3.3.1 *Past and Current Land Use*

The Project applicant has historically leased, and continues to lease, portions of the Entrada planning area for oil and natural gas production as well as for cattle grazing and agricultural operations. There is direct disturbance from past and ongoing oil and natural gas operations, including associated dirt road and oil pad ground clearance. There is soil scraping disturbance adjacent to the amusement park for fire suppression related to fireworks displays within the northern portion of the site, and an active borrow site is located within the eastern portion of the site. Additionally, SCE and SCGC have utility and transmission corridors within easements along the southern portion of the Entrada planning area. The easements/utility lines and access roads are actively maintained.

There is substantial existing development influence in the vicinity of the Entrada planning area, including I-5, SR-126, and secondary road infrastructure to the south, east, and north; medium-density residential housing and integrated golf course to the south and southeast; and major commercial land uses adjacent to the north and east, including the Six Flags Magic Mountain Amusement Park (County of Los Angeles 2007).

4.5.3.3.3.2 *Vegetation Communities and Land Covers*

Native and naturalized vegetation communities within the Entrada planning area are representative of the vegetation communities found in the Santa Susana Mountains and the Santa

Clara River ecosystems (**Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers). The dominant upland vegetation community is coastal scrub; disturbed land and California annual grasslands are also prevalent. Undifferentiated chaparral and developed land are also present. The coastal scrub includes areas that are characterized as heterogeneous scrub, as well as areas dominated by California sagebrush and California buckwheat. These coastal scrub vegetation communities also include native shrubs, such as squaw bush, deerweed, California encelia, yerba santa, and chaparral bush mallow; smaller native species, such as blue dicks, California poppy, foothill needlegrass (*Nassella lepida*), California melic, chaparral nightshade, chick lupine, coast goldfields, common owl's clover, and California wishbone-bush; and non-native herbs, such as short-podded mustard and red-stemmed filaree. In addition to non-native annual grasses, the California grassland includes native wildflowers (yellow fiddleneck, blue dicks, common forget-me-not, and rusty popcorn flower) and non-native plants (short-podded mustard and red-stemmed filaree). The chaparral supports native shrubs (squaw bush, beaver-tail cactus (*Opuntia basilaris* var. *ramose*), and California sagebrush); native wildflowers, such as California wishbone-bush, arroyo lupine, coast goldfields, sacapellote, California aster, and common owl's-clover; and non-native plants (red-stemmed filaree, tree tobacco, and short-podded mustard). The intermittent drainage is deeply incised and supports river wash along the channel bottom, with big sagebrush scrub occurring on the adjacent terraces. The river wash supports scattered native shrubs, such as Great Basin sagebrush and scale-broom, native herbaceous species (telegraph weed, common eucrypta, and prickly cryptantha), and non-native plants (tocalote and tree tobacco). The big sagebrush scrub is dominated by Great Basin sagebrush and also supports native shrubs (California buckwheat, goldenbush, and Mexican elderberry), native wildflowers (common owl's-clover, coast paintbrush, tansy-leaved phacelia (*Phacelia tanacetifolia*), sticky phacelia (*Phacelia viscida*), chick lupine, and slender pectocarya), and non-native plants (red-stemmed filaree, tocalote, and milk thistle). There are several ephemeral drainages on site, but these do not experience sufficient hydrology to manifest vegetation communities different from the surrounding areas.

4.5.3.3.3.3 *Soils*

Soils on site include: Castaic-Balcom silty clay loams (30% to 50%) eroded; Cortina sandy loam (0% to 2% slopes); Cortina sandy loam (2% to 9% slopes); Hanford sandy loam (0% to 2% slopes); Hanford sandy loam (2% to 9% slopes); Metz loamy sand (0% to 2% slopes); River wash, sandy alluvial land; Sorrento loam (2% to 5% slopes); and Zamora loam (2% to 9% slopes) (USDA 1969).

4.5.3.3.3.4 *Special-Status Species*

Based on surveys conducted between 2000 and 2007, special-status wildlife species identified within the Entrada planning area include white-tailed kite, yellow warbler, Cooper's hawk, southern California rufous-crowned sparrow, loggerhead shrike, turkey vulture, mule deer, and

monarch butterfly (**Figure 4.5-6**, RMDP/SCP – Special-Status Wildlife Species Occurrences). The following special-status plant species were identified within the Entrada planning area: San Fernando Valley spineflower, slender mariposa lily, island mountain mahogany, Peirson's morning glory, mainland cherry, California black walnut, coast live oak, and Parish's sagebrush. See **Table 4.5-6** in **Subsection 4.5.3.1** for a list of biological surveys conducted in the Project area and immediate vicinity from 1988 to the present.

4.5.3.4 Existing Conditions by Biological Resource

4.5.3.4.1 Vegetation Communities and Land Cover Types

This subsection describes the existing setting for vegetation communities and land cover types in the Project area, including the RMDP, and Entrada planning areas.

Vegetation community and land cover classifications used in this EIS/EIR generally follow the Vegetation Classification and Mapping Program "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" system (CDFG 2003, updated in October 2007 (CDFG 2007D)), as described in **Subsection 4.5.3.2**, Survey Methods. The vegetation community types, along with their floristic alliances and associations, and human-dominated land cover types are described below. Additional information regarding special-status vegetation communities is provided in **Subsection 4.5.3.4.4**. The classification code number given for each community, alliance, or association, as applicable, under this classification system in the following descriptions is noted parenthetically after the vegetation community, alliance, or association name. Where vegetation types observed on site do not conform with CDFG (2003) vegetation community classification system, they are defined for this EIS/EIR based on the dominant plant species. Communities that are recovering from burns were mapped as "burned" associations, and native communities that contain 20% to 50% native species by percent cover were mapped as "disturbed" associations. Areas where native species cover was visually estimated to be less than 20% were mapped as disturbed land. Areas mapped as "agriculture" have been or are in cultivation. Areas mapped as "developed" represent paved roads, structures, and other hardscape features. Where a grassland vegetation community was visually estimated to contain 10% or more percent absolute cover of native perennial grasses (*e.g.*, *Nassella pulchra*), the area was mapped as a native grassland. The 10% threshold is an industry standard for identifying perennial native grasslands (Keeler-Wolf *et al.* 2007). Oak woodland is defined as areas with 20% to 50% cover by oak trees. Oak/grass includes areas where oak trees comprise less than 20% of the total cover.

Fourteen general vegetation community types and three human-dominated land cover types (*i.e.*, active and inactive agriculture, disturbed land, and developed land) were identified in the Project area (RMDP, VCC, and Entrada planning areas) during the field investigations. The vegetation and land use types are mapped on **Figures 4.5-11-A1** through **4.5-11-C2**, **4.5-20**, and **4.5-21** and are summarized in **Table 4.5-17**. The descriptions below are organized by general vegetation community type, floristic alliance (as applicable), and association (as applicable).

Table 4.5-17
Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	VCC Acreage	Entrada Acreage
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	2,175.5	71.1	53.2
	Native Grassland	Purple needlegrass	Not mapped to association level	0.6	0.0	0.0
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	1,529.3	35.6	59.0
			Burned California sagebrush scrub	1,469.3	0.0	0.0
			California sagebrush–*Artemisia californica*	82.5	0.0	3.4
			California sagebrush–purple sage	393.5	0.0	0.0
			Disturbed California sagebrush–purple sage	4.5	0.0	0.0
		California sagebrush–black sage scrub	California sagebrush–black sage	196.3	0.0	0.0
		California sagebrush–California buckwheat scrub	Not mapped to association level	310.0	6.0	97.5
		California sagebrush scrub–undifferentiated chaparral	Not mapped to association level	135.0	0.0	0.0
			Burned California sagebrush scrub–undifferentiated chaparral	5.2	0.0	0.0
		Coyote brush scrub	Not mapped to association level	9.2	0.0	0.0
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	1,106.9	0.0	24.5
			Burned undifferentiated chaparral	957.2	0.0	0.0
	Chaparral with Chamise	Chamise chaparral	Not mapped to association level	55.7	0.0	0.0
			Burned chamise chaparral	0.0	0.0	0.0
	Chaparral with Oak	Scrub oak chaparral	Not mapped to association level	1.5	0.0	0.0

Table 4.5-17
Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	VCC Acreage	Entrada Acreage
	Other Scrubs	Eriodictyon scrub	Not mapped to association level	0.2	0.0	0.0
Broad Leafed Upland Tree Dominated	Upland Walnut Woodland and Forest	California walnut woodland and forest	California walnut woodland	27.2	0.0	0.0
	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	757.8	0.0	0.0
		Mixed oak woodland and forest	Not mapped to association level	168.9	0.0	0.0
		Valley oak forest and woodland	Valley oak woodland	79.4	0.0	0.0
			Valley oak/grass	461.4	0.0	0.0
Bog and Marsh	Marsh	Bulrush–cattail wetland	Not mapped to association level	1.4	0.0	0.0
		Cismontane alkali marsh	Not mapped to association level	18.6	0.0	0.0
		Fresh–brackish water marsh	Coastal and valley freshwater marsh	2.0	0.0	0.0
Riparian and Bottomland Habitat	Other Riparian/Wetland	Herbaceous wetland	Not mapped to association level	183.1	0.9	0.0
		River wash	Not mapped to association level	290.0	37.5	4.9
		Alluvial scrub	Not mapped to association level	1.0	0.0	0.5
		Big sagebrush scrub	Not mapped to association level	76.5	0.0	14.8
		Big sagebrush scrub	Big sagebrush-California buckwheat	0.5	0.0	0.0
		Giant reed	Not mapped to association level	5.6	0.0	0.0
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	18.7	0.0	0.0
		Mexican elderberry	Not mapped to association level	12.8	0.0	0.0
		Mexican elderberry	Disturbed Mexican elderberry	0.3	0.0	0.0
		Mulefat scrub	Not mapped to association level	71.5	0.5	0.0
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	22.7	0.0	0.0
		Tamarisk scrub and woodland	Shrub tamarisk	2.8	0.0	0.0

Table 4.5-17
Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage	VCC Acreage	Entrada Acreage
		Coast live oak forest and woodland	Southern coast live oak riparian forest	0.7	0.0	0.0
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	358.3	63.4	0.0
Man-Made Land Cover Types		Agriculture	NA	1,576.4	40.5	0.0
		Developed land	NA	0.5	2.2	2.0
		Disturbed land	NA	1,080.6	63.7	56.2
		Total		13,651.1	321.4	316.0

4.5.3.4.1.1 *Non-Native Grassland (42.000.00)*

California Annual Grassland (42.040.00). California annual grassland is characterized by a mixture of weedy, introduced annuals, primarily grasses (Sawyer and Keeler-Wolf 1995; Holland 1986). California annual grassland typically includes wild oat (*Avena* spp.), bromes (*Bromus diandrus, B. madritensis, B. hordeaceus*), black mustard (*Brassica nigra*), filaree (*Erodium* spp.), and Russian thistle (*Salsola tragus*). It may occur where disturbance by maintenance (*e.g.*, mowing, scraping, disking, and spraying), grazing, repetitive fire, agriculture, or other mechanical disruption has altered soils and removed native seed sources from areas formerly supporting native vegetation (Holland 1986).

On site, California annual grassland occurs within the Specific Plan, VCC, and Entrada planning areas. It occurs in large, contiguous patches north of the Santa Clara River in the San Martinez Grande Canyon, Off-Haul Canyon, and Homestead Canyon areas, and south of the River in Potrero Canyon. Smaller, scattered patches are present in the Salt Creek area and High Country SMA in the western portion of the Project area, and in very scattered, small patches in the eastern portion of the Project area. Most of the California annual grassland within the Specific Plan area is affected by cattle grazing practices, primarily in Potrero Canyon. Disturbance of annual grasslands in the VCC planning area consists primarily of non-native weedy plant colonization (black mustard, bromes, and tocalote (*Centaurea melitensis*)), dirt roads, and widespread soil disturbance from the concrete drainage pipe described above, resulting in substantial soil erosion. California annual grassland in the Entrada planning area and the western portion of the Specific Plan area appears to be, at least in part, the result of post-fire growth following the 2003 Verdale and Simi wildfires.

On site, California annual grassland consists of various annual non-native grasses and annual forbs, including wild oat (*Avena fatua*), slender oat (*Avena barbata*), bromes, and goldentop (*Lamarckia aurea*). California annual grassland includes a variety of native wildflowers, such as blue dicks (*Dichelostemma capitatum*), yellow fiddleneck (*Amsinckia menziesii*), silver puffs (*Uropappus lindleyi*), Lindley's annual lupine (*Lupinus bicolor*), angel gilia (*Gilia angelensis*), strigose deerweed (*Lotus strigosus*), common owl's clover (*Castilleja exserta*), California poppy (*Eschscholzia californica*), rusty popcorn flower (*Plagiobothrys canescens*), chick lupine (*Lupinus microcarpus*), and slender pectocarya (*Pectocarya linearis*), and non-native species, including red-stemmed filaree (*Erodium cicutarium*), short-podded mustard (*Hirschfeldia incana*), yellow sweet-clover (*Melilotus indica*), Russian thistle, tocalote, and milk thistle (*Silybum marianum*). Some of these grasslands include occasional California sagebrush scrub species as described below. It was unclear during vegetation mapping whether

these California sagebrush scrub component species represent transitional vegetation recolonizing grassland areas or scrub that was being replaced with annual grassland.

4.5.3.4.1.2 *Native Grassland (41.000.00)*

Purple Needlegrass (41.150.00). Purple needlegrass is defined as containing at least 10% absolute cover of perennial native grasses. The 10% threshold is an industry standard for identifying perennial native grasslands (Keeler-Wolf *et al.* 2007). According to Holland (1986), valley needlegrass grassland is a mid-height (to two feet) grassland dominated by perennial, tussock-forming purple needlegrass (*Stipa* [*Nassella*] *pulchra*). Native and introduced annuals occur between the perennials, often outnumbering the bunchgrass in cover. This habitat type usually is found on fine-textured, clay soils that are moist or waterlogged during the winter months, but very dry in the summer. This habitat type often intergrades with oak woodlands on moister, better drained sites. Common species include California melicgrass (*Melica californica*), boreal yarrow (*Achillea borealis*), brome grasses (*Bromus* spp.), and melic grasses (*Melica* spp.).

The California Department of Fish and Game (CDFG 2007D) proposes to recognize foothill needlegrass and nodding needlegrass grasslands as distinct associations, but CDFG has not yet compiled needed data. The three common needlegrass species tend to segregate from one another, based on substrate and slope factors (Sawyer and Keeler-Wolf 1995).

There is a very small area of purple needlegrass (less than one acre) in the High Country SMA, in the south-central portion of the Specific Plan area, surrounded by coastal scrub and burned coastal scrub.

On site, purple needlegrass supports the following native species: purple needlegrass, foothill needlegrass (*Nassella lepida*), blue dicks, yellow fiddleneck, common owl's clover, and Lindley's annual lupine; as well as a variety of brome grasses, red-stemmed filaree, and tocalote.

4.5.3.4.1.3 *Coastal Scrub (32.000.00)*

Coastal scrub (including alliances and associations) is a native plant community characterized by a variety of soft, low, aromatic, drought-deciduous shrubs, such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), California bush sunflower (*Encelia californica*), and true sages (*Salvia* spp.), along with scattered evergreen shrubs that can include lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and

toyon (*Heteromeles arbutifolia*) (Holland 1986). It typically develops on south-facing slopes and other xeric situations.

The plant community structure of the coastal scrub on site appears to be relatively intact, although some relatively large areas in the Specific Plan area have burned or are subject to grazing impacts. Other disturbances of coastal scrub on site include dirt roads and utility tower footprints in the VCC planning area, although overall this community is relatively intact in VCC. Although the Entrada planning area is influenced by nearby and adjacent disturbance and development, overall this community is relatively intact in Entrada. However, non-native plant elements, such as mustards (primarily short-podded mustard), Russian thistle, and brome grasses, are evident where there is adjacent direct disturbance, such as bladed dirt roads, oil pads, and other disturbed lands.

Coastal scrub is a general vegetation community. On site, coastal scrub is mapped to at least the alliance level and, in some cases, to the association level. Each is dominated by a particular species that characterizes the alliance or association. In some cases, the dominant plant species may be the only species present (Sawyer and Keeler-Wolf 1995). Four alliances of coastal scrub were mapped in the Project area: California sagebrush scrub, California sagebrush-black sage scrub, California sagebrush-California buckwheat scrub, and California sagebrush-undifferentiated chaparral.

On site, coastal scrub occurs primarily in wide areas on the central and northeastern portions of the Specific Plan area, including Chiquito Canyon, San Martinez Grande Canyon, Potrero Canyon, and within the High Country SMA and Salt Creek area. Much of this community within the High Country SMA, Salt Creek area, and San Martinez Grande was burned during the Simi Fires of 2003. These areas appear to exhibit traditional post-fire coastal scrub recovery, *via* resprouting and seed germination (Rundel 2007). Primary disturbances in this vegetation are dirt roads and utility tower footprints in the VCC planning area and edge effects of adjacent land uses in the Entrada planning area. In general, coastal scrub was relatively intact in both these planning areas. However, non-native plants, such as mustards (primarily *Hirschfeldia incana*), Russian thistle, and brome grasses, were evident where there was adjacent direct disturbance, such as bladed dirt roads, oil pads, and other disturbed lands.

California Sagebrush Scrub (32.010.00). The California sagebrush scrub alliance comprises the large majority of the coastal scrub in the Project area. It is mapped where California sagebrush is the dominant shrub on site (Sawyer and Keeler-Wolf 1995).

On site, unburned California sagebrush scrub is distributed throughout the Project area on the drier south- or west-facing slopes, with large patches north of East Fork of Salt Creek, High Country SMA, the eastern portion of Chiquito Canyon, and in the eastern portion of

the Project area, including Middle, Lion and Dead-End canyons. Burned areas mapped as California sagebrush scrub primarily occur in the Salt Creek area and the western portion of High Country SMA, with a smaller burned area in the San Martinez Grande Canyon area. Much of this community within the western one-third of the Specific Plan area was affected by the Simi Fires of 2003. In burned areas with active grazing, it appears that California annual grassland has replaced at least some pre-existing coastal scrub. Less accessible backcountry areas appear to exhibit more natural post-fire sagebrush recovery, including crown-sprouting and successional growth.

The unburned California sagebrush scrub on site is includes a mixture of California sagebrush, black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California buckwheat. Other native shrubs in this community on site include our Lord's candle (*Yucca whipplei*), Mexican elderberry (*Sambucus mexicana*), white sage (*Salvia apiana*), California encelia (*Encelia californica*), chaparral bush mallow (*Malacothamnus fasciculatus*), giant ryegrass (*Leymus condensatus*), bush monkeyflower (*Mimulus aurantiacus*), coastal prickly-pear (*Opuntia littoralis*), and squaw bush (*Rhus trilobata*); smaller native species, such as California wishbone-bush (*Mirabilis laevis* var. *crassifolia*), yellow pincushion (*Chaenactis glabriuscula*), California dodder (*Cuscuta californica*), lacy phacelia (*Phacelia tanacetifolia*), long-stem golden yarrow (*Eriophyllum confertiflorum*), common forget-me-not (*Cryptantha intermedia*), common owl's clover, deerweed (*Lotus scoparius*), wild cucumber (*Marah macrocarpus*), chick lupine, silver puffs (*Uropappus lindleyi*), slender woolly buckwheat (*Eriogonum gracile* var. *gracile*), yellow fiddleneck, common eucrypta (*Eucrypta chrysanthemifolia*), blue dicks, granny's hairnet (*Pterostegia drymarioides*), shrubby phacelia (*Phacelia ramosissima*), cliff malocothrix (*Malacothrix saxatilis*), and California melic (*Melica imperfecta*); and non-native species (red-stemmed filaree, tocalote, Russian thistle, yellow sweet-clover, short-podded mustard, horehound (*Marrubium vulgare*), and tree tobacco (*Nicotiana glauca*)).

Two associations of California sage scrub alliance are also present on site: California sagebrush–*Artemisia californica* (32.010.01) and California sagebrush–purple sage (32.010.04), including disturbed. These associations were mapped in areas where California sagebrush and purple sage are the co-dominant species, although lesser amounts of the other species listed above may occur. A relatively small amount of California sagebrush–*Artemisia californica* is present is several scattered patches through the lower elevations of the Project area in Salt Creek, Potrero Canyon, Ayers Canyon, Long Canyon, Magic Mountain Canyon, and Lion Canyon. California sagebrush–purple sage occurs in relatively large patches in lower Salt Creek, Lion Canyon, and Magic Mountain Canyon, and in smaller patches in Off-Haul Canyon, San Martinez Grande

Canyon, Chiquito Canyon, upper Potrero Canyon, and along the south side of the Santa Clara River near Grapevine Mesa.

Coyote Brush Scrub (32.060.00). The coyote brush scrub alliance is dominated by coyote brush (*Baccharis pilularis*) (Sawyer and Keeler-Wolf 1995). Coyote brush scrub occurs mostly in uplands, but because it is an effective colonizer of disturbed sites, it can be found in xeric to seasonally mesic areas, in heavily disturbed upland areas and flat areas, or canyons and drainages that receive low seasonal flow or urban runoff. It generally develops over time into coastal scrub, under suitable conditions.

On site, this vegetation community occurs north of the Santa Clara River in the vicinity of Homestead Canyon (in areas burned in 2003), where it is establishing very locally on east-facing slopes at lower elevations and is gradually colonizing upslope. These portions of slopes may be providing just enough moisture to maintain the coyote brush while other slope aspects may be too dry for the species to effectively spread. This alliance also occurs in several small patches on the south side of the Onion Fields and in the upper reaches of eroding drainages south of the Santa Clara River, such as the East Fork of Salt Creek, but is uncommon in the Specific Plan area.

Coyote brush scrub on site is dominated by coyote brush and also includes smaller native species, such as chaparral bush mallow, morning-glory (*Calystegia macrostegia*), caterpillar phacelia (*Phacelia cicutaria*), and arroyo lupine (*Lupinus succulentis*), and non-native species, such as horehound, short-podded mustard, milk thistle, and yellow sweet-clover.

California Sagebrush–California Buckwheat Scrub (32.110.00). This alliance is characterized by a co-dominance of California sagebrush and California buckwheat (Sawyer and Keeler-Wolf 1995).

The largest patches of California sagebrush-California buckwheat on site occur in the upper portion of Chiquito Canyon and in the Entrada planning area, with smaller patches in San Martinez Grande and Mid-Martinez canyons, Lion Canyon, and in VCC.

On site, this vegetation community is dominated by California sagebrush and California buckwheat, and also supports native shrubs such as squaw bush, purple sage, Mexican elderberry, goldenbush (*Ericameria palmeri* var. *pachylepis*), and chaparral bush mallow; native wildflowers including California wishbone-bush, California poppy, blue dicks, coast goldfields (*Lasthenia californica*), globe gilia (*Gilia capitata*), and angel gilia; and non-native species (red-stemmed filaree and short-podded mustard).

California Sagebrush–Black Sage Scrub (32.120.00). This alliance was mapped to the California sagebrush–black sage (32.120.01) association level, indicating that California sagebrush is the dominant shrub species, with black sage as the co-dominant.

This association primarily occurs on site in three main areas: Ayers Canyon/Ayres Rock, between San Martinez Grande and Chiquito canyons, and generally between Long and Potrero canyons. Smaller patches of this association occur between Exxon and Lion canyons.

In addition to California sagebrush and black sage, this vegetation community supports the following species on site: shrubs, such as yerba santa (*Eriodictyon crassifolium*), our Lord's candle, Great Basin sagebrush (*Artemisia tridentata*), Mexican elderberry, giant ryegrass, and California encelia; native herbaceous species, including yellow-fiddleneck, common forget-me-not, California dodder, sacapellote, common eucrypta, California chicory (*Rafinesquia californica*), wild cucumber, and southern sun cup (*Camissonia bistorta*); and non-native species (short-podded mustard, red-stemmed filaree, yellow sweet-clover, and horehound.

California Sagebrush Scrub–Undifferentiated Chaparral (modified from 32.300.00 Coastal Sage Chaparral Scrub). California sagebrush scrub–undifferentiated chaparral is not a CDFG (2003) alliance, but on site occurs as a co-dominance of California sagebrush and chaparral scrub species, as described below for undifferentiated chaparral.

This vegetation community occurs in two main areas on site: in the Sawtooth Ridge northeast of Long Canyon and southwest of Lion Canyon. A small patch occurs in the upper portion of Potrero Canyon, contiguous with off-site patches on the Legacy Village site.

On site, this vegetation community includes native shrubs, such as California sagebrush, squaw bush, California buckwheat, purple sage, and chaparral bush mallow; smaller native species (coastal lotus (*Lotus salsuginosus*), angel's gilia, California goosefoot (*Chenopodium californicum*), leafy daisy (*Erigeron foliosus*), blue dicks, California peony (*Peonia californica*), California aster (*Lessingia filaginifolia*), whispering bells (*Emmenanthe penduliflora*), fascicled tarweed (*Hemizonia fasciculata*), and tansy-leaved phacelia (*Phacelia tanacetifolia*)); and non-native species (red-stemmed filaree and short-podded mustard).

4.5.3.4.1.4 *Undifferentiated Chaparral Scrubs (37.000.00)*

The vast majority of chaparral on site was mapped as undifferentiated chaparral scrub, including burned areas, at a general vegetation community type level. Chaparral in general is a drought- and fire-adapted community of broad-leafed shrubs one and one-half to three meters tall, typically forming dense, impenetrable stands when mature. It develops primarily on mesic, north-facing slopes and in canyons. Undifferentiated chaparral scrubs, as designated by CDFG (2003), correlates to Holland's (1986) southern mixed chaparral community, where no one species dominates the shrub canopy; typically, there is a mixture of chamise (*Adenostoma fasciculatum*), ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), scrub oak (*Quercus dumosa*), laurel sumac, sugar bush (*Rhus ovata*), toyon, and sages (*Salvia* spp.).

The distribution of undifferentiated chaparral scrubs in the Project vicinity forms part of a complex mosaic of vegetation, and generally occurs as a transition community between oak woodlands in the wetter, deeper soils and coastal scrubs on drier, shallower soils. The highly complex geomorphology of the region contributes to this complexity and variety of microclimatic conditions.

Undifferentiated chaparral scrubs occur in the higher elevations of the Specific Plan area, including north Chiquito Canyon, south of Grapevine Mesa, and in the southern portion of the High Country SMA. Most of the undifferentiated chaparral scrubs in the Specific Plan area are relatively intact and undisturbed, probably because of their distribution in the higher and steeper elevations. However, large areas of burned undifferentiated chaparral scrubs resulting from the Simi Fires of 2003 occur through the center of the Specific Plan area along Salt Creek and eastward to Pico Canyon. Intact and relatively undisturbed undifferentiated chaparral scrubs in the Entrada planning area are limited to relatively small areas within the southern portion of the Entrada planning area.

The undifferentiated chaparral on site includes a mixture of native shrubs (squaw bush, chamise, hoaryleaf ceanothus (*Ceanothus crassifolius*), mainland cherry (*Prunus ilicifolia* ssp. *ilicifolia*), spiny redberry (*Rhamnus crocea*), sugar bush, holly-leaf redberry (*Rhamnus ilicifolia*), poison oak (*Toxicodendron diversilobum*), toyon, prickly phlox (*Leptodactylon californicum*), chaparral bush mallow, purple sage, and mountain mahogany (*Cercocarpus betuloides*)) and smaller, more herbaceous native species, such as California wishbone-bush, California peony, chaparral nightshade (*Solanum xanti*), Lindley's annual lupine, California poppy, rusty popcorn flower, whispering bells, globe gilia, sacapellote, heart-leaf penstemon (*Keckiella cordifolia*), common forget-me-not, California butterweed (*Senecio californicus*), white snapdragon (*Antirrhinum coulterianum*), California goosefoot, and redmaids; non-native herbaceous species are also present, including short-podded mustard, red-stemmed filaree, and Russian thistle.

4.5.3.4.1.5 *Chaparral with Chamise (37.100.00)*

Chamise Chaparral (37.101.00). The chamise chaparral alliance is defined as having at least 60% cover of chamise in the canopy (Sawyer and Keeler-Wolf 1995). Other chaparral species may occur as well, including chamise, ceanothus, mountain mahogany, manzanita, scrub oak, laurel sumac, sugar bush, toyon, and sages. Mature stands of chamise chaparral are very dense, up to three meters in height, and generally support a very limited herbaceous understory (Holland 1986).

Chamise chaparral on site is limited to a few locations, including upper Chiquito Canyon, west of lower Long Canyon, along the Specific Plan/Legacy Village boundary in upper Long Canyon, and east of Lion Canyon.

On site, this vegetation community is dominated by chamise and also supports native shrub species, such as hoaryleaf ceanothus, squaw bush, toyon, bladder pod (*Isomeris arborea*), California buckwheat, giant ryegrass, black sage, and California encelia; smaller native plants, including California peony, sacapellote, California aster, California wishbone-bush, California dodder, common forget-me-not, globe gilia, wild cucumber, and chaparral nightshade; and non-native species (black mustard and short-podded mustard).

4.5.3.4.1.6 *Chaparral with Oak (37.400.00)*

Scrub Oak Chaparral (37.407.00). The scrub oak alliance is defined as having at least 60% cover of scrub oak in the canopy (Sawyer and Keeler-Wolf 1995). According to Holland (1986), this vegetation community can attain heights of 20 feet, and it is typically dominated by scrub oak with mountain mahagony also typically present. Characteristic species include scrub oaks (*Quercus* spp.), ceanothus, mountain mahogany, toyon, holly-leaf cherry (*Prunus ilicifolia*), poison oak, redberry (*Rhamnus* spp.), silk-tassel bush (*Garrya* veatchii), and narrow-leaved bedstraw (*Galium angustifolium*) (Holland 1986).

Scrub oak chaparral occurs in only one location, in the upper portion of the East Fork of Salt Creek.

On site, scrub oak chaparral is dominated by scrub oak, and also supports other native shrubs, such as poison oak, sugar bush, Mexican elderberry, yerba santa, black sage, purple sage, and California sagebrush; smaller native species including wild cucumber, caterpillar phacelia, and western jimsonweed (*Datura wrightii*); and non-natives abumashi (*Schismus barbatus*) and horehound.

4.5.3.4.1.7 *Other Scrubs*

Eriodictyon Scrub. Eriodictyon scrub is dominated by yerba santa (*Eriodictyon crassifolium* var. *nigrescens*). It does not conform with CDFG (2003) defined vegetation communities and is defined here as a scrub community dominated by yerba santa.

Eriodictyon scrub occurs in the Specific Plan area along the southern end of Magic Mountain Canyon and is contiguous with an off-site patch on Legacy Village. It is adjacent to big sagebrush scrub, California sagebrush scrub, California annual grassland, chaparral, and disturbed land and is relatively intact.

On site, eriodictyon scrub is dominated by an almost monotypic stand of yerba santa. This vegetation community does support a few other sparsely distributed native shrubs, including California buckwheat, goldenbush, black sage, and purple sage; native herbaceous species western jimsonweed (*Datura wrightii*) and butterweed (*Senecio flaccidus* var. *douglasii*); and the non-native tocalote.

4.5.3.4.1.8 *Oak Woodland and Forest (71.000.00)*

Coast Live Oak Forest and Woodland (71.060.00). This alliance on site is mapped to the association level as coast live oak woodland (71.060.19). According to Holland (1986), coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia*). Canopy height ranges from 30 to 80 feet. The shrub layer is poorly developed, but may include toyon, gooseberry (*Ribes* spp.), laurel sumac, or Mexican elderberry. The herb component is continuous, dominated by a variety of introduced species, such as brome grasses (Holland 1986).

On site, coast live oak woodland is defined as areas with 20% to 50% cover by coast live oak. Most of the coast live oak woodland on the RMDP study area occurs in the southern half, generally in south-facing canyons in the High Country SMA and Salt Creek area. In accessible areas along Salt Creek, the understory of this woodland community has been impacted by historical and ongoing grazing practices and is dominated by non-native grasses, such as wild oat, slender oat, and bromes. Smaller patches of coast live oak woodland generally occur in south-facing canyons throughout the Project area, including along the East Fork of Salt Creek and, to a lesser extent, along the Santa Clara River tributary canyons, such as Ayers Canyon, Long Canyon, Humble Canyon, Lion Canyon, Exxon Canyon, and upper Chiquito Canyon.

In addition to coast live oak trees, the coast live oak woodland includes occasional valley oak trees (*Quercus lobata*); a variety of native shrubs, such as goldenbush, Mexican

elderberry, yerba santa, currants (*Ribes* spp.), and Great Basin sagebrush; native herbaceous species, including common owl's clover, California aster, yellow fiddleneck, wild cucumber, elegant clarkia (*Clarkia unguiculata*), miner's lettuce (*Claytonia perfoliata*), wild pea (*Lathyrus vestitus*), Parry's larkspur (*Delphinium parryi*), California mugwort (*Artemisia douglasiana*), blue fiddleneck (*Phacelia distans*), chaparral nightshade, American bowlesia (*Bowlesia incana*), Pacific sanicle (*Sanicula crassicaulis*), California melic, California maiden-hair (*Adiantum jordani*), fiesta flower (*Pholistoma auritum*), California hedge parsley (*Yabea microcarpa*), poison sanicle (*Sanicula bipinnata*), California goldenrod (*Solidago californica*), California goosefoot, blue dicks, wild cucumber, globe gilia, and angel gilia; and non-native species (hedge mustard (*Sisymbrium officinale*), common sow-thistle (*Sonchus oleraceus*), goose grass (*Galium aparine*), tocalote, red-stemmed filaree, yellow sweet-clover, milk thistle, common chickweed (*Stellaria media*), and tree tobacco).

Valley Oak Forest and Woodland (71.040.00). The valley oak forest and woodland alliance includes two associations: valley oak woodland (71.040.08) and valley oak/grass (71.040.05). According to Holland (1986), this vegetation community is typically manifested by valley oak trees providing a canopy over a grassy-understoried savannah. The canopy of the valley oaks rarely exceeds 30 to 40% cover (Holland 1986). On site, valley oak woodland includes a predominance of valley oaks in sufficient numbers to constitute 20% to 50% of the total cover. Valley oak/grass includes areas where valley oak comprises less than 20% of the total cover. This association on site includes valley oaks sparsely occurring in California annual grassland.

On site, valley oak woodland occurs in relatively small patches in the southern portions of Salt Creek, the High Country SMA, and the East Fork of Salt Creek and in other smaller, scattered patches in the Windy Gap area and along the Santa Clara River north of Airport Mesa. Much larger patches of valley oak/grass occur on site in the southern portion of the Salt Creek area and High Country SMA, as well as smaller patches between the East Fork of Salt Creek and Potrero Canyon and the Magic Mountain Canyon area. Valley oak woodland and valley oak/grass appear to relate to grazing pressure, particularly in the southern portion of the Specific Plan area, where open woodland provides cattle with ideal forage and shade.

In addition to valley oak trees, valley oak woodland and valley oak/grass support native shrubs (Mexican elderberry and coyote brush); native herbaceous species, including miner's lettuce, California fuchsia (*Epilobium canum* ssp. *canum*), common owl's-clover, blue dicks, common lomatium (*Lomatium utriculatum*), fiesta flower, wild cucumber, yellow fiddleneck, blue dicks, arroyo lupine, California goosefoot, coast paintbrush

(*Castilleja affinis*), shrubby phacelia, common forget-me-not, yellow fiddleneck, common eucrypta, and arroyo lupine; as well as non-native species (common chickweed, short-podded mustard, black mustard, common sow-thistle, bull thistle (*Cirsium vulgare*), shepherd's purse, milk thistle, cheeseweed, and non-native grasses).

Mixed Oak Woodland and Forest (71.100.00). The mixed oak woodland and forest alliance includes a co-dominance of coast live oak trees and valley oak trees in sufficient numbers to constitute 20% to 50% of the oak woodland cover.

On site, mixed oak woodland and forest is limited to the High Country SMA and Salt Creek area, and typically occurs in patches where other oak woodland associations intergrade, such as coast live oak woodland and valley oak/grass. In areas subject to grazing, the understory of mixed oak woodland is typically dominated by non-native grasses, such as wild oat, slender oat, and bromes.

Mixed oak woodland on site is characterized by a co-dominance of coast live oak and valley oak canopy trees, and also supports many of the same understory species described above for coast live oak woodland, valley oak woodland, and valley oak/grass. Understory species for the mixed oak woodland include native shrubs, such as currants, Mexican elderberry, and poison oak; smaller native species, including California goosefoot, climbing bedstraw (*Galium porrigens*), coast paintbrush, yellow fiddleneck, shrubby phacelia, wild cucumber, and blue dicks; and non-native species (milk thistle, cheeseweed, short-podded mustard, bull thistle, and horehound).

4.5.3.4.1.9 *Upland Walnut Woodland and Forest (72.000.00)*

California Walnut Woodland and Forest (72.100.00). This alliance on site was mapped to the association level of California walnut woodland (72.100.01). Holland (1986) describes California walnut woodland as having an open tree canopy dominated by California walnut (*Juglans californica*), which allows a grassy understory to develop. This association was mapped where a predominance of California walnut occurred in sufficient numbers to constitute 20% to 50% absolute cover.

On site California walnut woodland occurs very locally in the southwestern corner of the RMDP study area, mostly on south-facing slopes within the Salt Creek area and within the southern portion of the High Country SMA. The California black walnut trees in these areas are low (generally less than 20 feet tall) and exhibit multiple trunks that give the trees a shrubby character (in contrast to the tall trees often seen in bottomlands and riparian areas).

The California walnut woodland that occurs on site supports an understory of native shrubs, such as Mexican elderberry, coyote brush, giant ryegrass, yerba santa, and poison oak; smaller native species, including cliff malacothrix, pipestems (*Clematis lasiantha*), common eucrypta, blue dicks, arroyo lupine, chaparral nightshade, wild cucumber, common forget-me-not, fiesta flower, Pacific sanicle, purple Chinese houses (*Collinsia heterophylla*), miner's lettuce, elegant clarkia, California melic, caterpillar phacelia, lacepod (*Thysanocarpus laciniatus*), valley clover (*Trifolium willdenovii*), and climbing bedstraw, and non-native species (yellow sweet-clover, horehound, common chickweed, cheeseweed (*Malva parviflora*), goose grass, black mustard, bull thistle, and California burclover (*Medicago polymorpha*)).

4.5.3.4.1.10 *Marsh (52.000.00)*

Bulrush–Cattail Wetland (52.102.00). Bulrush–cattail wetland is defined on site as marsh consisting of approximately equal dominance of bulrush (*Scirpus* sp.) and cattail (*Typha* sp.) species. This vegetation community is similar to Holland's (1986) description of coastal and valley freshwater marsh, which is dominated by *Scirpus* and *Typha* spp., but that typically includes a variety of other species, as described below.

This vegetation community occurs in only two small locations along lower Salt Creek within the High Country SMA where the soil is saturated enough to sustain this hydrophytic vegetation.

The bulrush–cattail wetland is dominated by winged three-square (*Scirpus americanus*) and broad-leaved cattail (*Typha latifolia*), with salt grass (*Distichlis spicata*) occurring along the margins. Occasional mulefat (*Baccharis salicifolia*) seedlings are also present.

Cismontane Alkali Marsh (52.203.00). According to Holland (1986), cismontane alkali marsh typically occurs in areas that are wet or inundated throughout most to all of the year. Dominant species include rushes (*Juncus* spp.), saltgrass, sedges (*Carex* spp.), yerba mansa (*Anemopsis californica*), and alkali heath (*Frankenia grandifolia*). This community occurs at lake beds and flood plains below 1,000 feet AMSL and is characterized by higher levels of salts than occur in the coastal and valley freshwater marsh. It differs from coastal saltmarsh primarily in that it is not subject to tidal inundation.

Cismontane alkali marsh on site occurs at the confluence of the East Fork and mainstem of Salt Creek and at two reaches in lower and middle Potrero Canyon where the topography flattens and provides suitable conditions for its formation. This marsh type

exhibits low vegetative diversity on site, possibly due to cattle grazing in Potrero Canyon and Salt Creek; however, the vegetation appears resilient and intact.

The cismontane alkali marsh on site includes native herbaceous species (salt grass, beardless wild rye (*Leymus triticoides*), and winged three-square); occasional mulefat seedlings are also present. The higher elevations and edges support native species (yerba mansa, western ragweed (*Ambrosia psilostachya*), and spearscale (*Atriplex triangularis*)); and non-native species (yellow sweet-clover, five-hooked bassia (*Bassia hyssopifolia*), and peppergrass (*Lepidium latifolium*)). Where water is actually flowing in small rills at the surface, winged three-square and Mexican rush (*Juncus mexicanus*) also occur.

Fresh-Brackish Water Marsh (52.100.00). This alliance was mapped to the association level of coastal and valley freshwater marsh (52.100.01). Coastal and valley freshwater marsh is an emergent freshwater wetland vegetation type that occurs where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Due to its being permanently flooded by fresh water, there is an accumulation of deep, peaty soils. It typically is dominated by species such as cattail, woolly sedge (*Carex lanuginosa*), yellow nutsedge (*Cyperus esculentus*), and bulrush (Holland 1986).

This community occurs on site along the lower to middle reach of Potrero Creek. Overall, this community is relatively intact and undisturbed on site.

On site, coastal and valley freshwater marsh supports native herbaceous species, such as broad-leaved cattail and winged three-square, with native species (yerba mansa and western ragweed) and non-native species (wild celery (*Apium graveolens*) and rabbit's-foot grass (*Polypogon monspeliensis*)) occurring at the fringes.

4.5.3.4.1.11 *Low to High Elevation Riparian Scrub (63.000.00)*

Arrow Weed Scrub (63.710.00). The arrow weed scrub alliance occurs in moderate to dense streamside thickets strongly dominated by arrow weed (*Pluchea sericea*). This disturbance-maintained community occurs along streambanks, ditches, and washes with gravelly or sandy channels in most major drainages in the drier southern parts of California. In addition to arrow weed, characteristic species include salt grass, narrow-leaved willow (*Salix exigua*), tamarisk (*Tamarix* spp.), rushes, and slender cattail (*Typha domingensis*) (Holland 1986).

On site, arrow weed scrub occurs in dense patches along the banks of the Santa Clara River or its tributaries, with a few tamarisk individuals interspersed throughout the community.

The arrow weed scrub on site is dominated by the native shrub arrow weed, but also supports native shrubs, such as mulefat and California sagebrush; native herbaceous species, such as chaparral nightshade, common eucrypta, caterpillar phacelia, and western ragweed; and non-native species, such as tamarisk, yellow sweet-clover, red-stemmed filaree, horehound, and short-podded mustard.

Mexican Elderberry (63.410.00). The Mexican elderberry scrub alliance is an open scrub vegetation community that occurs in foothill areas on the upper benches of streams, and it is often associated with sycamore riparian woodland. Sawyer and Keeler-Wolf (1995) describe this vegetation community as supporting Mexican elderberry as the sole or dominant shrub in the canopy. Associated species include poison oak, narrow-leaved willow, Fremont cottonwood (*Populus fremontii*), valley oak, and California wild grape (*Vitis californica*). The canopy can vary from open to continuous, and the ground layer is often grassy (Sawyer and Keeler-Wolf 1995). This vegetation community is not described by Holland (1986).

This plant community occurs in several small patches on site, including upper and lower Salt Creek, tributaries to the East Fork of Salt Creek, between middle Potrero Canyon and the East Fork of Salt Creek, lower Homestead Canyon, San Martinez Grande Canyon, south and west of middle Long Canyon, and along Middle Canyon. Overall, this community is relatively intact and undisturbed on site, although a small area was mapped as disturbed west of Long Canyon. A small area mapped in CDFG wetland jurisdiction is located in lower Potrero Creek.

On site, Mexican elderberry scrub is dominated by Mexican elderberry but also includes other native shrubs, such as Great Basin sagebrush and goldenbush; native herbaceous species, such as yellow fiddleneck, blue dicks, and rusty popcorn flower; and non-native species (nettle-leaved goosefoot (*Chenopodium murale*), horehound, milk thistle, Italian thistle (*Carduus pycnocephalus*), short-podded mustard, and tree tobacco).

Mulefat Scrub (63.510.00). The mulefat scrub alliance is a relatively low (two to three feet in height), dense, shrubby plant community that occurs in riparian vegetation, at the edges of catch basins, and in canyons. It is dominated by mulefat and may contain a small number of arroyo willow (*Salix lasiolepis*) individuals, upland shrubs, and facultative herbs. Mulefat scrub is a seral community that occurs mainly along major drainages and floodplains where the riparian vegetation is open or disturbed. Frequent

flooding and/or scouring apparently maintain this community in an early successional state (Holland 1986). Characteristic plant species in this community include mulefat, coyote brush, western ragweed, and a few other obligate or facultative wetland species (Reed 1988).

Mulefat scrub occurs in post-disturbance areas along the main channel of the Santa Clara River in the Specific Plan area. The main channel of Salt Creek is dominated by this community, which primarily grows in patches along sandy ditches and stream channels in the main and East forks of Salt Creek, lower Salt Creek, upper Potrero Creek, San Martinez Grande Canyon, along the Santa Clara River, in Castaic Creek, and in small, isolated patches in Middle Canyon and Dead-End Canyon. This community is somewhat limited in the VCC planning area and only comprises a small portion of the northern VCC planning area. Two patches of mulefat scrub in middle and upper Potrero Creek occur in CDFG wetland jurisdiction. A small patch of disturbed mulefat occurs in Castaic Creek south of VCC.

On site, mulefat includes native shrubs (mulefat, quail brush (*Atriplex lentiformis*), giant ryegrass, and coyote brush); smaller native species, such as yellow fiddleneck, common forget-me-not, cocklebur (*Xanthium strumarium*), western ragweed, California mugwort, arroyo lupine, California chicory, and wild heliotrope (*Heliotropium curassavicum*); and non-native species, such as cheeseweed, horehound, milk thistle, winter vetch (*Vicia villosa*), yellow sweet-clover, tocalote, short-podded mustard, tree tobacco, and tamarisk (*Tamarix ramosissima*).

4.5.3.4.1.12 *Riparian Forest and Woodland (61.000.00)*

Southern Willow Scrub (61.208.00). According to Holland (1986), southern willow scrub is a dense, broad-leafed, winter-deciduous riparian thicket dominated by several species of willow (*Salix* spp.), with scattered emergent Fremont cottonwood and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. This alliance is considered seral due to repeated disturbance/flooding, and is, therefore, unable to mature into the taller southern cottonwood–willow riparian forest (Holland 1986).

Southern willow scrub is fairly common on site, with occurrences along the Santa Clara River, upper and lower Potrero Creek, upper and lower Salt Creek, and the East Fork of Salt Creek. This alliance is presumed to be successional and was found to be intact and relatively undisturbed on site, except for the stands in Potrero Creek, which have experienced greater disturbance associated with grazing activities.

Southern willow scrub on site includes native trees (arroyo willow, red willow (*Salix laevigata*), narrow-leaved willow, and Goodding's black willow (*Salix gooddingii*)); native shrubs (quail brush, mulefat, arrow weed, Mexican elderberry, coyote brush, and giant ryegrass); native herbaceous species, including western ragweed, arroyo lupine, California mugwort, shrubby phacelia, yerba de chiva (*Clematis ligusticifolia*), yellow fiddleneck, and caterpillar phacelia; and non-native species, such as yellow sweet-clover, white sweet-clover (*Melilotus alba*), tumble mustard (*Sisymbrium altissimum*), hedge mustard, milk thistle tamarisk, short-podded mustard, and cheeseweed.

Tamarisk Scrub and Woodland (63.810.00). This alliance on site was mapped at the association level as shrub tamarisk (63.810.02). These areas are dominated by tamarisk, typically by *Tamarix ramosissima*. This invasive, non-native plant community is widely implicated in degradation of native riparian habitats throughout southern California and is the target of eradication efforts regionwide. Tamarisk typically occurs on moist soils and in streambeds, and its occurrence, similar to giant reed (*Arundo donax*), may be related directly to soil disturbance or introduction of propagules by grading or flooding. Tamarisk is a slow-growing species; however, once established, its removal is very difficult. Characteristic species include arrow weed, quail brush, narrow-leaved willow, and Palmer's coldenia (*Coldenia palmeri*) (Holland 1986).

Shrub tamarisk occurs on site in small, fairly monotypic patches at the lower end of Salt Creek, in middle and lower Potrero Canyon, in Castaic Creek near the confluence with the Santa Clara River, and just upstream of this confluence in the Santa Clara River.

On site, shrub tamarisk is dominated by tamarisk but also includes scattered native shrubs (coyote brush, quail brush, and mulefat), smaller native species (winged three-square, chaparral nightshade, cocklebur), and non-native species (horehound and short-podded mustard).

Fremont Cottonwood Riparian Forest and Woodland (61.130.00). This alliance was mapped as the association southern cottonwood–willow riparian (61.130.02). Southern cottonwood–willow riparian is a tall, open, broad-leafed winter-deciduous riparian forest dominated by Fremont cottonwood trees and several different species of willow (Holland 1986). It occurs in frequently overflowed lands along rivers and streams.

This association forms dense swaths of established vegetation along the main channel of the Santa Clara River in both the Specific Plan and Entrada planning areas and in Castaic Creek in the VCC planning area, generally occurring on the floodplains beyond the effects of flood scour. Small reaches and/or patches of southern cottonwood–willow

riparian also occur in upper Chiquito Canyon, upper Mid-Martinez Canyon, Potrero Canyon, and lower Middle Canyon.

Along the Santa Clara River, this association is relatively intact and undisturbed in both the Specific Plan and Entrada planning areas. However, edges of this riparian forest community are susceptible to exotic invasive species, such as giant reed and tamarisk, and patches of these exotic species were observed on site. Edge areas that have undergone scouring or sedimentation disturbance have a much higher susceptibility to invasive colonization, primarily by giant reed. This type of disturbance also creates colonization sites for the slow-growing tamarisk, but to a more limited degree.

On site, southern cottonwood–willow riparian forest supports an overstory of Fremont cottonwood, arroyo willow, and red willow; native shrubs, such as Great Basin sagebrush, quail brush, coyote brush, scale-broom, Mexican elderberry, California mugwort, giant creek nettle (*Urtica dioica*), and mulefat; native herbaceous species, such as wild cucumber, broad-leaved cattail, prickly cryptantha (*Cryptantha muricata*), western jimsonweed, yellow fiddleneck, Santa Barbara locoweed (*Astragalus trichopodus*), and common eucrypta; and non-native species (tamarisk, giant reed, Italian thistle, yellow sweet-clover, horehound, tree tobacco, abumashi, and milk thistle).

Coast Live Oak Forest and Woodland (71.060.00). This alliance was mapped as the association of southern coast live oak riparian forest (71.060.20). This association generally is characterized by open to dense woodlands in riparian zones dominated by oak species (*Quercus* sp.), with western sycamore, scalebroom scrub, mulefat scrub, or southern willow scrub as an understory as well as sclerophyllous shrubs, such as holly-leaf redberry, California coffeeberry (*Rhamnus californica*), laurel sumac, Mexican elderberry, fuchsia-flowered gooseberry (*Ribes speciosum*), toyon, poison oak, giant ryegrass, and lemonadeberry (Holland 1986). Large grassland areas dominated by bromes may also be present.

On site, there is a very small area (less than one acre) of southern coast live oak riparian forest at the confluence of Ayers Canyon and the Santa Clara River within terraces along the braided stream channel. This occurrence lies on a north-facing, mesic slope coming down onto the River bench, and is relatively undisturbed and intact.

Southern coast live oak riparian forest on site has a canopy of coast live oak trees with native shrubs (California sagebrush and giant ryegrass); smaller native species (yellow fiddleneck, California chicory, miner's lettuce, blue dicks, and wild cucumber); and non-native species (milk thistle, short-podded mustard, goose grass, Italian thistle, common sow-thistle, and red-stemmed filaree).

4.5.3.4.1.13 *Other Riparian/Wetland Communities*

Riparian/wetland alliances that do not conform to CDFG (2003) defined vegetation communities were mapped on site: herbaceous wetland, river wash, alluvial scrub, big sagebrush scrub, and giant reed. Alluvial scrub and big sagebrush scrub are recognized as upland coastal scrub and Great Basin scrub communities by CDFG (2003) elsewhere in California, but these communities do not apply here because the on-site communities are typically associated with floodplains and riparian communities rather than upland communities. Giant reed is included in Grass and Herb Dominated Communities by CDFG (2003), but is treated as a riparian community by this EIS/EIR because of its close association with native riparian and wetland communities on site.

Herbaceous Wetland. Herbaceous wetland does not conform to a CDFG (2003) defined vegetation community classification and was defined on site by the dominant plant species.

This vegetation community was observed in the Specific Plan area and VCC planning area within the Santa Clara River corridor. Herbaceous wetland on site appears to be an early seral form of riparian vegetation where past flooding (particularly during the winter of 2004/2005) has severely altered the bed of the Santa Clara River by scouring and deposition.

Herbaceous wetland appears to be highly susceptible to invasion by non-native riparian species, particularly giant reed and tamarisk. Giant reed has been observed forming rhizomatic clumps in a wide patchwork throughout this herbaceous wetland community in the Specific Plan area. Additionally, in the VCC planning area, this plant community is located immediately south of residential development and an existing dirt road to the east that is presumably used for utility access. Direct impacts of road disturbance and associated soil disturbance appear to be causing non-native plant colonization in the VCC planning area.

On site, herbaceous wetlands typically include thick stands of juvenile native seedlings and saplings, including Fremont cottonwood, willows, mulefat, arrow weed; native herbaceous species, such as broad-leaved cattail, Hooker's evening primrose (*Oenothera elata*), willow weed (*Polygonum lapathifolium*), cocklebur, California cottonweed (*Epilobium ciliatum*), and bulrushes (*Scirpus* ssp.); and non-native species, including water cress (*Rorippa nasturtium-aquaticum*), whorled dock (*Rumex conglomerates*), curly dock (*Rumex crispus*), tamarisk, giant reed, and pepperweed.

River Wash. River wash does not conform to a CDFG (2003) defined vegetation community classification and is defined on site as open wash that is unvegetated or

sparsely vegetated. River wash includes wash areas of the Santa Clara River and its tributaries that are unvegetated or sparsely vegetated with seedlings, sparse grasses, and forbs and that are subject to scouring by seasonal storm flows. A variety of individual herb, shrub, and even tree species sometimes occur within river wash as waifs or temporary inhabitants that do not persist for long periods because of frequent episodes of winter flooding. Mulefat and willow saplings, sparse grasses, and forbs often begin to establish after these natural disturbance patterns. River wash is a naturally dynamic habitat and may shift and change position within drainages, depending on flood volumes and behavior.

The Specific Plan area contains large areas of river wash, primarily within the Santa Clara River. Alteration of upstream flow on the Hasley Canyon drainage probably has changed more vegetated areas to river wash within the VCC planning area. Non-native plant elements, such as mustards (primarily short-podded mustard), bromes (*Bromus diandrus* and *B. madritensis*), and tocalote, were evident where adjacent road disturbance occurred on the west side of the VCC planning area. Typical species on the edge of river wash include tree tobacco and western jimsonweed. River wash in the Entrada planning area receives runoff from medium-density housing and a golf course uphill of the planning area. A concrete outfall transitions flows from this golf course to the river wash. The limited establishment of plants likely caused by scour during winter and spring rain events may be exacerbated by this alteration of upstream flow.

The river wash on site occurs within the low-flow channel and sporadically includes native shrubs such as Great Basin sagebrush, scale-broom, mulefat, goldenbush (*Isocoma menziesii*), and deerweed; as well as a variety of herbaceous species, including common eucrypta, wild rhubarb (*Rumex hymenosepalus*), common forget-me-not, yellow fiddleneck, mustard primrose (*Camissonia californica*), annual burweed (*Ambrosia acanthicarpa*), telegraph weed (*Heterotheca grandiflora*), Lindley's annual lupine, prickly cryptantha, yellow pincushion, sun cup (*Camissonia hirtella*), butterweed, deerweed, silver puffs, lacy phacelia; and non-native herbs, such as tree tobacco, milk thistle, common groundsel (*Senecio vulgaris*), lamb's-quarters (*Chenopodium album*), and tocalote.

Alluvial Scrub. Alluvial scrub is a general term for a variety of alliances and associations that may occur on alluvium associated with riverine floodways and alluvial fans. The nature of this community is one of periodic natural disturbance by flood action and deposition of alluvial sediments. Species usually found in this community include a mixture of wetland species that can tolerate more xeric conditions and transitional sage scrub species; this atypical assemblage of plant species occurs because of the alluvial

disturbance and sedimentation processes. Alluvial scrub as it occurs in the Project area does not conform to a CDFG (2003) defined vegetation community classification and was defined on site by the dominant plant species observed.

On site, alluvial scrub occurs along the Santa Clara River and its tributaries. It is limited to two small (each less than one acre) alluvial terraces located within the Specific Plan area (one along the Santa Clara River and one along a tributary to the East Fork of Salt Creek, a tributary of the Santa Clara River) and another small terrace in the Entrada planning area along Magic Mountain Canyon, a tributary of the Santa Clara River. This habitat was surrounded by road access and soil disturbance associated with earthworks in the Entrada planning area.

Species found on site within this community include scattered native species (Great Basin sagebrush, mulefat, narrow-leaved willow, tamarisk, deerweed, scale-broom, quail brush, California mugwort, California sagebrush, and cocklebur) and non-native species (short-podded mustard and tree tobacco).

Big Sagebrush Scrub. Big sagebrush scrub is composed mostly of Great Basin sagebrush, which are soft-woody shrubs one-half to two meters tall, usually with bare ground underneath and between shrubs (Holland 1986). As a CDFG (2003) recognized alliance (35.110.00) occurring in Great Basin Scrub, big sagebrush scrub is a widespread and characteristic shrub of the high desert and Great Basin floristic provinces, where it often occurs with pines and junipers. In the Santa Clarita area, however, it seems to occur in vegetation transitional to more typical cismontane coastal scrub.

On site, the big sagebrush scrub alliance generally occurs in alluvial areas along washes and is typically dominated by Great Basin sagebrush. Coastal scrub and chaparral component species also occur within this vegetation type where it intergrades or where transitional margins occur and in mixed patches where alluvial processes have influenced the pattern of vegetation. There is limited edge disturbance in this community in the Entrada planning area in the form of dirt roads and soil disturbances associated with earthworks at the eastern margin of the planning area. In general, however, this community is relatively intact in the Specific Plan and Entrada planning areas.

An association of big sagebrush scrub also occurs on site just north of Indian Dunes and SR-126: big sagebrush-California buckwheat. This small patch of big sagebrush-California buckwheat includes a predominance of Great Basin sagebrush with California buckwheat in sufficient numbers to constitute 20% to 50% of the total cover in the community.

The big sagebrush scrub includes native shrubs (Great Basin sagebrush, yerba santa, mulefat, coyote brush, squaw bush, scale-broom, quail brush, and California sagebrush); herbaceous native species, including California aster, wild cucumber, blue fiddleneck, wild rhubarb, blue dicks, lastarriaea (*Lastarriaea coriacea*), wild rhubarb, globe gilia, angel gilia, annual burweed, shrubby phacelia, whispering bells, lacy phacelia, cocklebur, strigose deerweed, Coulter's lupine (*Lupinus sparsiflorus*), arroyo lupine, yellow pincushion, California fluffweed (*Filago californica*), rusty popcorn flower, and common owl's clover; and non-native herbs (red-stemmed filaree, bull thistle, rubber rabbitbrush (*Chrysothamnus nauseosus*), Russian thistle, Australian saltbush (*Atriplex semibaccata*), tocalote, winter vetch, tree tobacco, yellow sweet-clover, common sow-thistle, tumble mustard, milk thistle, and horehound).

Giant Reed (42.080.00). Giant reed is a non-native, invasive vegetation alliance composed of monotypic or nearly monotypic stands of the species. Giant reed is fairly widespread in southern California riparian systems and, as such, is included in CDFG (2003) defined vegetation communities as a Grass and Herb Dominated Community. This non-native, perennial grass has invaded riverine floodplains and displaced native herb, scrub, and woodland communities and is a serious problem in many southern California watersheds. It has limited habitat value for wildlife, is highly flammable, and consumes large amounts of water. This invasive species is widely implicated in the degradation of native riparian habitats throughout southern California, and is the target of eradication efforts regionwide. Typically, it occurs on moist soils and in streambeds, and its occurrence may be related directly to soil disturbance or introduction of propagules by grading or flooding.

Large stands of giant reed occur along flood-scoured portions of the main channel of the Santa Clara River. Mapped occurrences may include occasional, surrounded native trees and remnant native riparian plant species. Although giant reed is pervasive in small (less than one acre) patches throughout the main channel and tributaries of the Santa Clara River, only those monotypic areas conforming to the vegetation mapping for this project were mapped. While several small isolated clumps occur, they have not been mapped because they did not achieve minimum mapping standards. This distribution of giant reed is suggestive of past disturbances upstream and within the Project area.

On site, the giant reed vegetation community is dominated by giant reed, and also supports scattered native species (mulefat, narrow-leaved willow, sun cup, yellow fiddleneck, and common eucrypta) and other non-native species (short-podded mustard, red-stemmed filaree, yellow sweet-clover, tree tobacco, abumashi, and common sow-thistle).

4.5.3.4.1.14 *Man-Made Land Cover Types*

The Project area includes three main man-made land cover types—agriculture, developed land, and disturbed land—that have resulted from historical, recent, and existing land uses.

Agriculture. Agriculture refers to areas where irrigated row and field crops are being grown (*e.g.*, intensive agriculture) as well as areas that may be recently or currently inactive (fallow). Agriculture may support such grass species as barley (*Hordeum* spp.) and wild oat. Grazing lands are not included in the agriculture classification. When actively farmed, this land has relatively little biological resource value for most native wildlife species because the soils are periodically tilled and vegetation is removed. Intensive agriculture also provides little habitat value where agricultural pest species, such as rabbits and squirrels, are actively controlled. When agricultural areas are left fallow for a period of time, they may become dominated by annual grasses and other weedy species, such as mustards, and while not considered high-quality wildlife habitat, they may provide at least temporary habitat for various rodents, rabbits, passerine (perching) birds, and foraging raptors.

Extensive agricultural practices have been conducted across the RMDP/SCP study area, particularly on Grapevine Mesa, Potrero Mesa, Onion Fields, and within many of the tributary canyons that flow into the Santa Clara River. Both dry land and irrigated agricultural practices have been conducted in Middle, Humble, Long, Potrero, and portions of Salt Creek canyons. Agricultural operations have long occurred within the alluvial soils bordering the Santa Clara River, and they abut the northern border of the riparian corridor in many areas. Intensive agricultural fields occur on the southeastern section of the VCC planning area and throughout areas adjacent to the Santa Clara River channel in the Specific Plan area. Fallow agricultural fields occur throughout Potrero Canyon, the lower reaches of Salt Creek Canyon, and on the major mesa areas (Airport Mesa, Grapevine Mesa, and Potrero Mesa).

Airport Mesa has been used for agricultural activities for a number of years, typically for irrigated crops. During the spring of 2008, Airport Mesa was fallow and supported dense populations of weedy annuals including brome grasses (*Bromus madritensis*, *B. diandrus*, *B. hordeaceus*), barley (*Hordeum* sp.), wild oats (*Avena barbata*, *A. fatua*), and rye grasses. In many locations, non-native annual species, such as cheeseweed, black mustard, short-podded mustard, and red-stemmed filaree comprised the dominant vegetative cover. Wildflowers were also common and included redmaids (*Calandrinia ciliata*), blue dicks, California poppy, Lindley's annual lupine, and various species of

phacelia (*Phacelia* spp.). San Fernando Valley spineflower is located to the east, south, and west of Airport Mesa.

Grapevine Mesa, although typically in active irrigated agricultural use, was fallow in the spring of 2008 and also supported weedy herbaceous annual plant communities. Most of this mesa was dominated by cheeseweed, red-stemmed filaree, short-podded mustard, London rocket (*Sisymbrium irio*), and California burclover (*Medicago polymorpha*). Russian thistle, milk thistle, and horehound were also present. San Fernando Valley spineflower is located to the east and west of Grapevine Mesa.

Onion Fields, located at the mouth of Long Canyon on a terrace above the Santa Clara River, is maintained as an irrigated sod farm. Additional agricultural areas extend up into Long Canyon; left fallow in 2008, these agricultural areas are dominated by many of the same weedy annual herbaceous plants described for Airport Mesa and Grapevine Mesa.

Potrero Mesa, located above and between Ayers and Potrero canyons, also supports various agricultural practices. Fallow in the spring of 2008, this area is also dominated by many of the same weedy herbaceous annuals described for Airport and Grapevine mesas, but also includes small populations of non-native species (shepherd's purse (*Capsella bursa-pastoris*) and common sow thistle) as well as native wildflowers, such as Lindley's annual lupine, California poppy, and yellow fiddleneck.

Developed Land. Developed land refers to areas supporting man-made structures, including industrial and commercial uses, private residences, and roadways, as well as other highly modified lands supporting structures associated with dwellings or other permanent structures.

Within the Specific Plan area, developed land generally refers to existing roads, oil rig pads, and associated infrastructure. This disturbance has resulted in widespread soil disturbance and non-native plant colonization along existing roadsides. These non-native plants have also invaded adjacent native vegetation communities. Mustards (primarily short-podded mustard) are a common indicator of these disturbed areas. There is significant development influence adjacent to the VCC planning area, including I-5, SR-126, and secondary roads to the west and east; medium-density residential housing to the north; and major commercial land uses immediately to the west and east. The secondary impacts of this development have resulted in widespread surface soil alteration and non-native plant colonization along existing roadsides, altering native habitat. Mustards are also a common indicator of these areas adjacent to development.

Disturbed Land. Disturbed land typically occurs in areas where soils have been recently or repeatedly disturbed by grading or compaction (*e.g.*, dirt roads), resulting in the growth of very few native perennials. These areas are usually dominated by bare ground or non-native dicotyledonous species, including filaree, black mustard, thistles (*e.g.*, *Cynara cardunculus*, *Carduus pycnocephalus*, and tocalote), dove weed, and others. Within the Project site, disturbed land occurs on permeable surfaces without vegetation as well as with weedy annual non-native vegetation, including Russian thistle, tocalote, dove weed, black mustard, and bull thistle. Usually, disturbed land has little wildlife habitat value but, similar to fallow agricultural lands, it may provide habitat for rodents and rabbits and raptor foraging habitat. Disturbed land is present throughout the RMDP/SCP study areas and has generally occurred in association with the various past and present land uses, including agriculture, gas and oil operations, and utilities. Much of the disturbed land is the linear dirt road network on site established in relation to these land uses. Larger, non-linear footprints of disturbed lands are particularly prevalent in the area between Potrero and Long canyons in the central portion of the RMDP/SCP study area.

4.5.3.4.2 Unique Landscape Features

This subsection describes the existing setting for three unique landscape features in the RMDP: the River Corridor SMA, High Country SMA/Salt Creek area, and Middle Canyon Spring. At the conclusion of this subsection, the long-term effects of Alternative 1 (No Action/No Project) on these unique landscape features are discussed.

The River Corridor SMA and High Country SMA/Salt Creek area have been designated as Significant Ecological Areas (SEAs) by the County of Los Angeles. The Newhall Ranch Specific Plan (County of Los Angeles 2003B) Land Use Plan designates approximately 5,182 acres for the River Corridor and High Country SMAs (**Figure 4.5-3**). The River Corridor SMA is generally 1,500 to 2,000 feet wide and is located along the north and south sides of the Santa Clara River. The High Country SMA/Salt Creek area is located in the southern portion of the Specific Plan area. Middle Canyon Spring is located at the mouth of Middle Canyon and provides habitat for two previously undescribed species: an undescribed aquatic snail and an undescribed sunflower.

4.5.3.4.2.1 *River Corridor SMA*

The Santa Clara River flows from its origins in the San Gabriel Mountains to the Pacific Ocean, approximately 50 miles to the west. The 977-acre River Corridor SMA includes the Santa Clara River within the Specific Plan area and associated vegetation communities. The main conservation values of the River Corridor SMA are its wetland and riparian vegetation communities that provide resident habitat for numerous wildlife species and its function as a

regional east–west wildlife habitat linkage and wildlife corridor for both resident and transitory species (see **Subsection 4.5.3.4.7**, Wildlife Habitat Connectivity and Buffers). State- and federally listed endangered and threatened species and numerous other special-status species have been observed or detected in riparian habitats of the River, including the state- and federally listed endangered unarmored threespine stickleback, southwestern willow flycatcher, and least Bell's vireo, among others. The River is an important migration and genetic dispersion corridor for many wildlife species, including aquatic taxa; riparian obligate species (resident and migratory); and larger, more mobile terrestrial animals.

The River Corridor SMA comprises a portion of the County's SEA 23. The Newhall Ranch Specific Plan (County of Los Angeles 2003B) delineates a River Corridor SMA that is sufficiently wide to handle the flood (50-year post-fire flood event) while retaining nearly all (91.2%) native vegetation within and along the River.

The biotic resources of the River Corridor SMA are vulnerable to damage from both ongoing and future human activities. As build-out of the Project area occurs, these environmental stressors will increase. To avoid, minimize, and mitigate these future potential impacts, the RMDP provides for transition areas between the River and development, restricts recreational uses in the River, and provides for the long-term management of the River Corridor SMA, including habitat restoration and enhancement. **Figure 4.5-10** shows the vegetation communities and land cover types present in the River Corridor SMA. **Figures 4.5-11** through **4.5-13** show the special-status species occurrences in the River Corridor SMA.

The River Corridor SMA vegetation communities and associated special-status species are described above in detail in **Subsection 4.5.3.3.1**.

4.5.3.4.2.2 *High Country SMA and Salt Creek Area*

The largest land use designation of the Newhall Ranch Specific Plan Land Use Plan is the 4,205-acre High Country SMA. The High Country SMA is located in the southern portion of the Specific Plan area and includes oak/grass savannahs, high ridgelines, and various canyon drainages, including the Salt Creek watershed in Los Angeles County. As part of its approval of the Specific Plan in 2003, the Los Angeles County Board of Supervisors imposed an off-site condition requiring the applicant to dedicate to the public the remaining 1,517-acre portion of the Salt Creek watershed in Ventura County adjacent to the western boundary of the Specific Plan area. Although the Salt Creek area was identified as an off-site area during the Specific Plan approval process by Los Angeles County, the area is within the RMDP boundary, and is included in the RMDP and SCP study areas.

The Newhall Ranch High Country SMA and Salt Creek area are in an unincorporated portion of the Santa Clara River Valley on the north slopes of the Santa Susana Mountains. Site elevations range from 800 feet AMSL in the Santa Clara River bottom in Ventura County to approximately 3,500 feet AMSL on the ridgeline of the Santa Susana Mountains along the southern boundary. This study area is dominated by rugged terrain, with the main feature being a south-to-north drainage area for Salt Creek and its associated tributaries (**Figure 4.5-7**). The High Country SMA and Salt Creek area vegetation communities (**Figure 4.5-14**) and associated special-status species (**Figure 4.5-15**) are described above in detail in **Subsection 4.5.3.3.1**.

As shown in **Figure 4.5-21**, the High Country SMA and Salt Creek area are part of the eastern arm of the conceptual linkage design identified in the South Coast Missing Linkages Project (Penrod *et al.* 2006). This linkage is about 4.5 miles (23,760 feet) wide in this area, with the narrowest portion of the High Country SMA and Salt Creek area being approximately 4,000 feet wide. The combined High Country SMA and Salt Creek area is a regionally significant wildlife habitat linkage that provides an important habitat link between the Santa Susana Mountains south of the Project area and the Santa Clara River.

4.5.3.4.2.3 *Middle Canyon Spring*

Middle Canyon Spring is just west of the mouth of Middle Canyon, on the south bank of the Santa Clara River (**Figure 4.5-22**). The spring is located on what appears to be an upper terrace of the Santa Clara River that is either fluvial in origin or an expression of underlying geological strata that are exposed at the surface. Approximately four feet of elevation separate this terrace from the River floodplain at the point nearest the spring to the north, and approximately eight feet of elevation separate this terrace from the River floodplain at the most westerly point. This terrace extends westward from the spring at a gentle slope and eventually tapers to an end where River flow has eroded the terrace. An intermediate elevation terrace or geological structure is present between the spring terrace and the Santa Clara River. This intermediate terrace slopes in a direction similar to the upper terrace and is marked at the western terminus by River erosion. Riparian vegetation in this near stretch of the Santa Clara River floodplain is likely enhanced by water outflows from both Middle Canyon Spring and the Middle Canyon drainage. It is possible that confluent surface water joins Middle Canyon Spring and the Middle Canyon drainage at peak flow events.

Flows at Middle Canyon Spring currently saturate a core area (approximately 400 square feet by 400 feet) of the spring complex (**Figure 4.5-23**). The core area may be limited in extent by two outflow channels that appear to have been excavated in the northern portion of the spring area. These channels drain water onto the intermediate terrace described above, from which the water

then flows into the Santa Clara River floodplain. Soils in the core area differ from those in the floodplain, as described further below.

This core area of Middle Canyon Spring is defined here as the area currently inundated by flow from the spring, including flowing or standing water or fully saturated soil. Within the core spring area, water appears to flow from numerous points at the toe of slope of the existing road fill. The water proceeds to flow across several benches, periodically coalescing into more distinct channels only to disperse again into sheet flow over lower benched areas.

The Middle Canyon Spring complex occurs in southern cottonwood–willow riparian forest in the Specific Plan area. The vegetation exhibits a clear pattern in response to the flow patterns described above. Bull tule (*Scirpus robustus*) appears to be associated with more consolidated flow, while more broadleaved herbaceous vegetation appears where sheet flow is present.

Southern cottonwood–willow riparian forest surrounds the core area of Middle Canyon Spring. The canopy trees are mature Fremont cottonwoods with heights of 30 to 45 feet and diameters up to three feet and arroyo willow trees with heights up to 20 feet. The dry understory is composed primarily of non-native grasses, such as ripgut brome (*Bromus diandrus*) and *Poa* sp. A heavy accumulation of organic duff is present. A row of Fremont cottonwoods stands on top of a low berm that forms the northwestern border of the current Middle Canyon Spring wetland. Some Fremont cottonwoods farther from the spring exhibit signs of water-deficit stress, indicating likely reliance on soil moisture from annual rainfall instead of the Middle Canyon Spring wetland.

Wetland vegetation of the core area of Middle Canyon Spring includes a perimeter thicket of desert wild grape (*Vitis girdiana*) and an abundance of bull tule. Some patches of cattails and California blackberry (*Rubus ursinus*) are present, interspersed with arroyo willow eight to 16 feet in height. Flowing surface water is present or soil is fully saturated. Substrate is sand and granitic gravel.

Areas of Italian thistle dominate large portions of the berms and basins west of the Middle Canyon Spring. Poverty weed (*Iva axillaris*) and Great Basin sagebrush dominate in an area between the eastern margin of Middle Canyon Spring and the bank of Middle Canyon Creek. This area has dense groundcover and moist soil. Another patch of this vegetation type is on the eastern bank of Middle Canyon Creek, opposite the spring.

An area composed of rushes (*Juncus* sp.) with Great Basin sagebrush is located northeast of Middle Canyon Spring. This area is on an old road berm between Middle Canyon Spring and the coast live oak woodland along the Middle Canyon drainage.

Within this setting, two special-status species are known to occur: the undescribed sunflower and the undescribed snail. See **Subsection 4.5.3.4.5** for a description of the undescribed sunflower and **Subsection 4.5.3.4.6** for a description of the undescribed snail.

4.5.3.4.3 General Wildlife[1]

This subsection describes the existing setting for general wildlife in the Project area, including the RMDP, VCC, and Entrada planning areas.

4.5.3.4.3.1 *RMDP*

Much of the 13,651-acre RMDP area is currently subject to rapidly changing land use practices (*i.e.*, transitioning from rural to residential and commercial), and large areas of previously continuous natural and agricultural lands in the Santa Clarita Valley now consist of urban development. However, large areas of natural uplands, riparian zones, and pastureland still remain in the RMDP area and support a diverse community of both common and special-status wildlife. The various vegetation community types described in **Subsection 4.5.3.4.1** contribute to the diversity and abundance of wildlife in the area, as they provide both resident and seasonal breeding habitat and function as habitat linkages and movement corridors for many of the wildlife species.

Birds. Bird species, including several special-status species, were the most common vertebrates observed in the RMDP area, both because this taxon is typically the largest component of terrestrial vertebrates in general and because most of the wildlife surveys conducted in the RMDP area focused on birds. Riparian areas, including locations adjacent to the Santa Clara River, support many resident and breeding species, including least Bell's vireo (*Vireo bellii pusillus*), yellow warbler (*Dendroica petechia*), yellow-rumped warbler (*Dendroica coronata*), yellow-breasted chat (*Icteria virens*), and the migrant willow flycatcher (*Empidonax traillii*). Common species observed within these same habitats included Anna's hummingbird (*Calypte anna*), cliff swallow (*Petrochelidon pyrrhonota*), American goldfinch (*Carduelis tristis*), dark-eyed junco (*Junco hyemalis*), and red-breasted sapsucker (*Sphyrapicus ruber*). Several common and less common species were observed in chaparral, coastal scrub, and California annual grassland in the RMDP area, including Bewick's wren (*Thryomanes bewickii*), ruby-crowned kinglet (*Regulus calendula*), blue-gray gnatcatcher (*Polioptila caerulea*), rufous-crowned sparrow (*Aimophila ruficeps*), mountain bluebird (*Sialia currucoides*), northern mockingbird (*Mimus polyglottos*), western meadowlark (*Sturnella neglecta*), and loggerhead shrike (*Lanius ludovicianus*). Many species commonly associated with human activity were observed along more developed areas, including American crow (*Corvus brachyrhynchos*), house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), and European starling (*Sturnus vulgaris*).

[1] Additional reference information for the wildlife observations listed in this subsection appears in **Subsection 4.5.3.1** (**Table 4.5-6**) and in the text of **Subsection 4.5.3.2.3**.

Raptors are plentiful in the region, and suitable nesting and foraging habitat for raptor species occurs throughout the RMDP area. Riparian communities, such as southern coast live oak riparian forest and southern cottonwood–willow riparian and upland oak woodlands, provide suitable nesting habitat for several raptor species, and the annual grasslands and disturbed areas adjacent to the River corridor and adjacent to agricultural areas provide foraging habitat for both nesting residents and winter visitors. Turkey vulture (*Cathartes aura*), Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) were commonly detected foraging during the surveys. In 2007, the state fully protected white-tailed kite (*Elanus leucurus*) was observed in the RMDP area. Other raptors observed foraging on site include northern harrier (*Circus cyaneus*), sharp-shinned hawk (*Accipiter striatus*), peregrine falcon (*Falco peregrinus*), merlin (*Falco columbarius*), prairie falcon (*Falco mexicana*), red-shouldered hawk (*Buteo lineatus*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), and burrowing owl (*Athene cunicularia*).

Insects. The RMDP area vegetation communities contribute to the variety of insect species on site. Insect populations can vary widely, depending on the physical characteristics of the substrate and current land use practices within the RMDP. For example, agricultural areas treated with pesticides may have lower abundances of insects when compared to riparian or annual grassland areas. However, numerous insect (ants, crickets, grasshoppers, beetles) and arachnid species (spiders, ticks) were detected in the RMDP. These invertebrates serve as prey for a variety of vertebrate species that are expected to occur in this area. Lepidoptera species (butterflies) were commonly observed in the RMDP area, and the species identified reflect the mosaic of different habitats that occur in this area. Butterfly species observed on site in upland habitat areas (including agriculture) included checkered white (*Pontia protodice*), alfalfa butterfly (*Colias eurytheme*), anise swallowtail (*P. zelicaon*), painted lady (*Vanessa cardui*), west coast lady (*Vanessa annabella*), buckeye (*Junonia coenia*), chalcedon checkerspot (*Euphydryas chalcedona*), Behr's metalmark (*Apodemia mormo virgulti*), Bernardo blue (*Euphilotes bernardino*), pigmy blue (*Brephidium exilis*), and common hairstreak (*Strymon melinus pudicus*). Butterfly species observed within the riparian habitats included western tiger swallowtail (*Papilio rutulus*), cabbage white (*Pierus rapae*), and Lorquin's admiral (*Basalarchia lorquini*).

Fish. The Santa Clara River supports a variety of fish species, including arroyo chub (*Gila orcuttii*), Santa Ana sucker (*Catostomus santaanae*), unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), largemouth bass (*Micropterus salmoides*), western mosquitofish (*Gambusia affinis*), and prickly sculpin (*Cottus asper*). With the exception of the mouths of Middle and Potrero canyons, tributaries to the Santa Clara River lack fish and suitable habitat for fish (ENTRIX 2009).

Reptiles. The upland and riparian vegetation communities present in the RMDP area provide habitat for several reptile species. Semi-aquatic reptiles observed on site in association with riparian habitats in the Santa Clara River include southwestern pond turtle (*Actinemys marmorata pallida*) and two-striped garter snake (*Thamnophis hammondii*). While both of these species rely on aquatic sites for parts of their life cycles, they also use upland habitats. Reptiles documented through visual observations and pitfall trapping in upland and dry wash habitats include western whiptail (*Aspidoscelis tigris*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), coast horned lizard (*Phrynosoma coronatum*), alligator lizard (*Elgaria multicarinata*), silvery legless snake (*Anniella pulchra pulchra*), western skink (*Eumeces skiltonianus*), California whipsnake (*Masticophis lateralis*), coachwhip (*Masticophis flagellum*), western rattlesnake (*Crotalus viridis*), California black-headed snake (*Tantilla planiceps*), California western blindsnake (*Leptotyphlops humilis*), common kingsnake (*Lampropeltis getulus*), and gopher snake (*Pituophis catenifer*).

Amphibians. Amphibians typically require a source of standing or flowing water to complete their life cycle. However, some more terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Riparian habitat located along the Santa Clara River and on-site tributaries and uplands associated with these areas support the California treefrog (*Hyla cadaverina*), Pacific treefrog (*Hyla regilla*), and western toad (*Bufo boreas*). The western spadefoot toad (*Spea hammondii*) has been documented in middle Potrero Canyon, at the northern edge of Grapevine Mesa adjacent to the Santa Clara River, north of Lion Canyon, at the northern edge of Airport Mesa adjacent to the Santa Clara River, and in the Santa Clara River upstream of the Commerce Center Drive Bridge. Adult arroyo toads (*Bufo californicus*) have not been detected in the RMDP area, but arroyo toad tadpoles have been found in the Santa Clara River in the RMDP area in five locations, from the Middle Canyon tributary downstream to the Exxon Canyon tributary. The non-native invasive African clawed frog (*Xenopus laevis*) has been observed in the Santa Clara River in backwater areas at the confluence of the River and Castaic Creek and in isolated floodplain pools, as well as in Potrero Creek (ENTRIX 2009).

While many of the amphibian populations in the RMDP area are expected to be largely restricted to the riverine and riparian habitats (and adjacent upland habitats) and other moist woodland habitats, species such as arroyo toad can be located far from riparian areas. Both the arroyo toad and western toad spend considerable time away from aquatic habitat for most of their life histories.

Mammals. The RMDP area supports habitat for a variety of mammals. Common mammal species identified in the RMDP area include raccoon (*Procyon lotor*), California ground squirrel (*Spermophilus beecheyi*), brush rabbit (*Sylvilagus bachmani*), striped

skunk (*Mephitis mephitis*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*). Botta's pocket gopher (*Thomomys bottae*), California pocket mouse (*Chaetodipus californicus*), kangaroo rat (*Dipodomys* sp.), several murid rodents (rats and mice) (*Peromyscus maniculatus, P. californicus, P. boylii, P. erermicus, Microtus californicus, Neotoma lepida, N. fuscipes,* and *Reithrodontomys megalotis*) are also present. In addition, the RMDP area is frequented by wide-ranging carnivores, including gray fox (*Urocyon cinereoargenteus*) and long-tailed weasel (*Mustela frenata*). Although less-frequently observed, American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), and black bear (*Ursus americanus*) are also present.

Upland and riparian habitats, man-made structures, and the rock outcrops in the region provide habitat for a variety of bat species. Focused bat surveys conducted in 2004 and 2006 using acoustic bat detectors, mist netting, and direct observation confirmed or indirectly established the potential for several common and special-status species in the RMDP area (Impact Sciences 2005, Johnson 2006). A maternity roost used by the special-status pallid bat (*Antrozous pallidus*) is present in a building in middle Potrero Canyon, and a night roost for this species is present in lower Potrero Canyon. Other bat species confirmed on site include the relatively common western pipistrelle (*Pipistrellus hesperus*), big brown bat (*Eptesicus fuscus*) and Mexican free-tailed bat (*Tadarida brasiliensis*), and five special-status species: pocketed free-tailed bat (*Nyctinomops femorosaccus*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), fringed myotis (*Myotis thysanodes*), and Yuma myotis (*Myotis yumanensis*). Bats with high potential to occur based on recorded acoustic signals include the special-status western small-footed myotis (*Myotis ciliolabrum*) and long-legged myotis (*Myotis volans*), and the common California myotis (*Myotis californicus*) and little brown bat (*Myotis lucifugus carissima*). No day roosts for these other common and special-status bats were detected on site during the bat surveys. The Santa Clara River corridor, and particularly the I-5 Bridge over the River, are used extensively by the various bat species for foraging and night roosts. All survey locations in Potrero Creek, the Santa Clara River at Walcott Road, upper Long Canyon, and The Old Road and I-5 area of the Santa Clara River had bat activity by at least several species, and it is likely that bats are fairly widespread in the RMDP area.

Mollusks. In 2006, an undescribed species of snail (*Pyrgulopsis* sp. *nova*) was observed in the RMDP area within portions of the Middle Canyon Spring. A specimen was collected and sent to the Smithsonian Institution in Washington, D.C., for identification and was determined to be an unidentified species of spring snail. The undescribed snail belongs to the genus *Pyrgulopsis* (Hershler 2007), which belongs to the Hydrobiidae (spring snail) family (Liu and Hershler 2007). In 2007, the snail was also observed in the lower reach of the adjacent Middle Canyon drainage (Dudek 2007C).

4.5.3.4.3.2 *VCC*

The 333-acre VCC planning area supports habitat for a large number of upland and riparian wildlife species, although at a much smaller scale than the 13,651-acre RMDP area. Vegetation communities and land covers providing upland wildlife habitat include coastal scrubs (California sagebrush scrub, California sagebrush–California buckwheat scrub), California annual grassland, agriculture, and disturbed land. Castaic Creek, which crosses the site, supports a variety of riparian and wetland communities, including herbaceous wetland, mulefat scrub, southern cottonwood–willow riparian forest, and river wash. Developed land is also present. With the exception of developed land, these vegetation communities and land covers are suitable for supporting some resident species a variety of foraging wildlife species, such as raptors. No focused wildlife surveys were conducted in the VCC planning area, but a general wildlife survey of the site was conducted by Dudek in September 2006 (Dudek and Associates 2006D).

Birds. Bird species are the most common vertebrate found in the VCC planning area. A variety of upland and riparian bird species were observed in the VCC planning area, including turkey vulture, Cooper's hawk, red-tailed hawk, white-tailed kite, California quail (*Callipepla californica*), killdeer (*Charadrius vociferous*), Anna's hummingbird, Costa's hummingbird (*Calypte costae*), black phoebe (*Sayornis nigricans*), western kingbird (*Tyrannus verticalis*), horned lark (*Eremophila alpestris*), western scrub-jay (*Aphelocoma coerulescens*), least Bell's vireo, rufous-crowned sparrow, yellow warbler, lesser goldfinch (*Carduelis psaltria*), oak titmouse (*Baeolophus inornatus*), Nuttall's woodpecker (*Picoides nuttallii*), great egret (*Ardea alba*), and great blue heron (*Ardea herodias*).

Insects. No species of butterflies or moths were recorded in the VCC planning area, probably due to late summer timing of surveys (September 2006). However, 24 species of butterflies were recorded during a butterfly survey on the Entrada site, the core of which is about a mile south of the VCC planning area (Compliance Biology 2004C). The butterflies recorded on the Entrada site during this survey included many of the common species observed in the RMDP (listed above), and it is likely that many of these species are also present in the VCC planning area. It is likely that the numerous insect (ants, crickets, grasshoppers, beetles) and arachnid species (spiders, ticks) detected in the RMDP area also occur in the VCC planning area.

Fish. Castaic Creek is dry during most of the year, except when flow is released from Castaic Lake upstream or when rain events maintain surface flow for an extended period of time (ENTRIX 2009). When the creek is flowing, adequate aquatic habitat exists to support the various fish species found in the Santa Clara River watershed. Fish species collected by ENTRIX, Inc. (2009) during a September 2005 survey were arroyo chubs and Santa Ana suckers. Unarmored threespine sticklebacks have been collected in

Castaic Creek in the past (ENTRIX 2009) when persistent flows and aquatic habitat conditions are present there. Castaic Creek has also supported prickly sculpin and western mosquitofish.

Reptiles. Only the western fence lizard was observed on site during the general wildlife surveys. The upland coastal scrub and annual grassland present in the VCC planning area provide habitat for several additional reptile species, such as side-blotched lizard, alligator lizard, coast horned lizard, western skink, western whiptail, gopher snake, common kingsnake, and coachwhip. The two semi-aquatic reptiles—southwestern pond turtle and two-striped garter snake—have potential to occur in the reach of Castaic Creek that passes through the VCC planning area and to use adjacent upland habitats on site. Two-striped garter snake was observed in Castaic Creek in 2003 (Ecological Sciences, Inc. 2003A). The southwestern pond turtle has been observed just south of the VCC planning area at the confluence of Castaic Creek and the Santa Clara River.

Amphibians. Riparian habitat located along Castaic Creek, and uplands associated with the Creek, are suitable for amphibians. Three species have been recorded in the VCC planning area: African clawed frog, Pacific treefrog, and western toad (Ecological Sciences, Inc. 2003A). Amphibian populations in the VCC planning area are expected to be largely restricted to riverine and riparian habitat and adjacent upland habitats.

Mammals. No focused surveys for mammals (including bats) have been conducted within the VCC planning area. General wildlife surveys noted several mammals, however, including cottontail rabbit (*Sylvilagus* sp.), California ground squirrel, Botta's pocket gopher, coyote, and bobcat. Many of the smaller mammal species listed above for the RMDP area are also expected to occur on the VCC site due to similar habitats on site. Mule deer and mountain lion probably do not occur, or may rarely occur, in uplands on site due to the increasing urbanization of the area, but may pass through the area along Castaic Creek. The black bear probably does not occur in the area. Bat foraging habitat is available in the VCC planning area, and the species listed above for the RMDP area potentially use this area as well.

4.5.3.4.3.3 *Entrada*

The 392-acre Entrada planning area supports several upland and riparian vegetation communities, providing habitat for a variety of upland and riparian/wetland species, although at a much smaller scale than the 13,651-acre RMDP area. Upland vegetation and land cover types include California annual grassland, coastal scrubs (California sagebrush scrub, California sagebrush–California buckwheat scrub), undifferentiated chaparral, disturbed land, and developed land. Riparian communities present on site (apart from the Santa Clara River) include river wash alluvial scrub. The adjacent Santa Clara River supports river wash, herbaceous wetland, southern cottonwood–willow riparian, and southern willow scrub. Wildlife observed on

site and reported below are from bird surveys in the reach of the Santa Clara River adjacent to the Entrada Planning area by Guthrie (2000D, 2004G); general wildlife surveys by Dudek (Dudek and Associates 2006E), which included observations of reptiles, birds, and mammals; and butterfly surveys by Compliance Biology (2004C).

Birds. Birds were the most common vertebrate observed within the Entrada planning area, both because this taxon is typically the largest component of terrestrial vertebrates in general and because most of the wildlife surveys conducted in the Entrada planning area focused on birds. Upland scrub and chaparral species observed included Allen's hummingbird (*Selasphorus sasi*), black-chinned hummingbird (*Archilochus alexandri*), Costa's hummingbird, California quail, western scrub-jay, blue-gray gnatcatcher, wrentit (*Chamaea* fasciata), California thrasher (*Toxostoma redividum*), loggerhead shrike, phainopepla (*Phainopepla nitens*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), and rufous-crowned sparrow. The Santa Clara River and on-site tributaries support several riparian and woodland species, such as yellow warbler, Nuttall's woodpecker, northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), cliff swallow, house wren (*Troglodytes aedon*), yellow warbler, Wilson's warbler (*Wilosnia pusilla*), and song sparrow (*Melospiza melodia*). Only one upland woodland species was observed: oak titmouse. Several raptor species were observed on site, including Cooper's hawk, white-tailed kite, red-tailed hawk, red-shouldered hawk, American kestrel, and turkey vulture.

Insects. A total of 24 butterfly species was observed in the Entrada planning area during focused surveys by Compliance Biology (2004C). All of the butterflies listed above for the RMDP area were also observed in the Entrada planning area. It is likely that the numerous insect (ants, crickets, grasshoppers, beetles) and arachnid species (spiders, ticks) detected in the RMDP area also occur in the Entrada planning area.

Fish. The Santa Clara River, in the reach that passes through the Entrada planning area, supports three fish species: arroyo chub, unarmored threespine stickleback, and Santa Ana sucker (ENTRIX 2009).

Reptiles. Only the western fence lizard was observed on site during the general wildlife surveys (Dudek and Associates 2006E). The upland coastal scrub, undifferentiated chaparral, and California annual grassland present in the Entrada planning area provide habitat for several additional reptile species, such as side-blotched lizard, alligator lizard, coast horned lizard, western skink, western whiptail, gopher snake, common kingsnake, and coachwhip. The two semi-aquatic reptiles—southwestern pond turtle and two-striped garter snake—have been observed in the Santa Clara River adjacent to the Entrada planning area and could use adjacent upland habitats on site.

Amphibians. Riparian vegetation along the Santa Clara River and on-site tributaries, and uplands associated with these areas, provides habitat for the Pacific treefrog, arroyo toad, and western toad. Amphibian populations in the Entrada planning area are expected to be largely restricted to riverine and riparian habitats and adjacent upland habitats.

Mammals. No focused surveys for mammals (including bats) have been conducted within the Entrada planning area. General wildlife surveys noted several mammals, however, including cottontail rabbit, California ground squirrel, woodrat (*Neotoma* spp.), long-tailed weasel, coyote, bobcat, and mule deer. Many of the smaller mammal species listed above for the RMDP area are also expected to occur in the Entrada planning area due to similar habitats on site. Mountain lions may use the site occasionally and have been observed in this general area in the past. The black bear probably does not occur in the area. Bat foraging habitat is available in the Entrada planning area, and the species listed above for the RMDP area potentially use this area as well.

4.5.3.4.4 Special-Status Vegetation Communities

Vegetation community and land cover classifications used in this report primarily follow the Vegetation Classification and Mapping Program "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003, updated in October 2007 (CDFG 2007D)). Two of the primary purposes of the CNDDB classification are to assist in characterizing vegetation in a consistent manner and to identify rare and declining vegetation types. The ranking of natural communities by rarity or threat is an important facet of this system. For the purposes of this EIS/EIR, vegetation communities denoted on the October 2007 (CDFG 2007D) list as G1, G2, or G3 (high priority for inventory) or otherwise regulated by local, state, and/or federal resource agencies are considered to have "special status."

Of the 41 vegetation communities occurring on the Project site, California walnut woodland, valley oak woodland, valley oak/grass, southern willow scrub, southern coast live oak riparian forest, and southern cottonwood–willow riparian forest are currently denoted as G1, G2, or G3 by CDFG (2007D) and, therefore, are considered special status. In addition to those vegetation communities ranked as G1, G2, G3, riparian and wetland vegetation communities and purple needlegrass (designated G4/S3?) are considered special status. Given the occurrence of *Artemisia tridentata* ssp. *parishii* (which is considered special status by the County of Los Angeles) within the big sagebrush scrub community, for the purposes of this EIS/EIR, big sagebrush scrub is also considered to be a special-status vegetation community. Please see **Table 4.5-17**, Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area, and the subsequent vegetation community descriptions in **Subsection 4.5.3.4.1** for a more detailed discussion of these vegetation communities and their distribution on the Project site.

At the conclusion of this subsection, the long-term effects of Alternative 1 (No Action/No Project on special-status vegetation communities are discussed.

4.5.3.4.4.1 *Upland Communities*

Purple Needlegrass (41.150.00/G4S3?[1]). Purple needlegrass is a grassland community ranked as G4S3? by CDFG (2007D), indicating that it is "vulnerable to extirpation or extinction" within the state of California. This ranking is based on historical losses and

[1] Uncertainty about the rank of an element is expressed in two major ways: First, by expressing the ranks as a **range** of values: *e.g.*, S2S3 means the rank is somewhere between S2 and S3. Second, by adding a "?" to the rank: *e.g.*, S2? This represents more certainty than S2S3, but less certainty than S2.

ongoing threats. Much of the former grassland has been converted to other land uses (agriculture, urban and industrial) (Bartolome *et al.* 2007). Remaining California native grassland vegetation has largely been replaced or degraded by invasive non-native species so that much of its former acreage is now dominated by European annual grasses in the genera *Bromus*, *Avena*, and *Hordeum*, plus forbs in the genera *Erodium*, *Brassica*, and *Centaurea* (D'Antonio *et al.* 2007). These non-native species tend to outcompete native grasses at every phase in their life histories, especially the seedling establishment phase, though established perennial grasses can persist with non-native species for many years. Non-native species are commonly favored by natural disturbance processes (*e.g.*, rodent activity and wildfire) and by human-caused changes, such as grazing and increased atmospheric nitrogen deposition (D'Antonio *et al.* 2007). The wholesale shift from native perennial to non-native annual species in these grasslands affects soil water and nutrient dynamics and soil microorganisms, tending to further degrade natural systems and favor invasive species (D'Antonio *et al.* 2007).

California Walnut Woodland (72.100.01/G3S3). California walnut woodland is ranked as G3S3 by CDFG (2007D), indicating that it is "vulnerable to extirpation or extinction" both globally (*i.e.*, across its entire range) and within the state of California. This ranking is based on historical losses and ongoing threats; southern California black walnut is vulnerable to several effects related to urbanization. Due to urban sprawl, much of the California walnut woodlands have been destroyed or threatened. Furthermore, natural processes that encourage seedling development are imperiled. The species requires wet summer conditions and full sunlight for successful propagation (Holstein 1981). Diversion of water and the restriction of waterways have depleted possible natural environments and blocked expansion of already restricted communities. Southern California black walnut can be adversely affected by changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff). Changed hydrologic conditions can alter seed bank characteristics and modify habitat for species such as the southern California black walnut.

Valley Oak Woodland (71.040.00/G3S3). Valley oak woodland is ranked as G3S3 by CDFG (2007D), indicating that it is "vulnerable to extirpation or extinction" both globally (*i.e.*, across its entire range) and within the state of California. This ranking is based on loss of habitat and ongoing threats due to human proximity. Oak damage from human activity can lead to increased susceptibility to diseases. Oak mistletoe (*Phoradendron villosum*), a common parasite in urbanized areas, causes host stems to swell and crack, creating possible entry points for wood-decaying fungi (Swiecki and Bernhardt 1996). Hedgehog fungus (*Hericium erinaceus*), most commonly associated with wounds from fires, cracks, and vandalism, can lead to disintegration of decayed

tissue (Swiecki and Bernhardt 1996). Sunscald, associated with canopy thinning, causes bark to shrink and crack and eventually dry out, providing opportunities for beetle boring and fungi infection (Swiecki and Bernhardt 1996). A variety of oak diseases and blights are associated with modified water regimes, especially from irrigation (Swiecki and Bernhardt 1996). Fires can damage a large percentage of oak trees or even destroy an entire population. Direct scorching can create open areas, which become susceptible to non-native plant and animal invasion. Non-native plants tend to recover from fire more quickly than native species, leading to their domination over native species and destruction of oak succession (Pavlik *et al.* 1991).

Valley Oak/Grass (71.040.05/G3S3). Valley oak/grass is ranked as G3S3 by CDFG (2007D), indicating that it is "vulnerable to extirpation or extinction" both globally (*i.e.*, across its entire range) and within the state of California. The threats for valley oak/grass are the same as described above for valley oak woodland.

4.5.3.4.4.2 *Riparian Waters and Wetlands*

Most natural riparian vegetation in southern California has been lost or degraded due to land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; ground water pumping; water impoundments; and various other changes. Smith (1977), Katibah (1984), and Faber *et al.* (1989) estimated that as much as 95% to 97% of riparian habitats have been lost. Riparian habitats are biologically productive and diverse, and they are the exclusive habitat of several threatened or endangered wildlife species and many other special-status plant and wildlife species. For these reasons, each of the riparian vegetation communities listed below is considered to be special status.

Herbaceous Wetlands

Bulrush–Cattail Wetland (52.102.00/G5S3). Bulrush–cattail wetland is ranked as G5S3 by CDFG (2007D), indicating that it is "demonstrably widespread, abundant, and secure" across its entire range, but is "vulnerable to extirpation or extinction" within the state of California.

Cismontane Alkali Marsh (52.203.00/G4S3). Cismontane alkali marsh is ranked as G4S3 by CDFG (2007D), indicating that it is "apparently secure" across its entire range, but is "vulnerable to extirpation or extinction" within the state of California.

Coastal and Valley Freshwater Marsh (52.100.01/NA[2]). Coastal and valley freshwater marsh does not have a global or state ranking.

Herbaceous Wetland (NA/NA). Herbaceous wetland does not have a global or state ranking.

River Wash (NA/NA). River wash does not have a global or state ranking.

Riparian Scrub

Alluvial Scrub (NA/NA). Alluvial scrub does not have a global or state ranking.

Arrow Weed Scrub (63.710.00/G4S3). Arrow weed scrub is ranked as G4S3 by CDFG (2007D), indicating that it is "apparently secure" across its entire range, but is "vulnerable to extirpation or extinction" within the state of California.

Big Sagebrush Scrub (35.110.00/G5S4). Big sagebrush scrub is ranked as G5S4 by CDFG (2007D), indicating that it is "demonstrably widespread, abundant, and secure" across its entire range, but is "apparently secure" within the state of California.

Giant Reed (42.080.00/U[3]). Giant reed does not have a global or state ranking.

Mexican Elderberry (63.410.00/G3S3). Mexican elderberry scrub is ranked as G3S3 by CDFG (2007D), indicating that it is "vulnerable to extirpation or extinction" both globally (*i.e.*, across its entire range) and within the state of California

Mulefat Scrub (63.510.00/G5S4). Mulefat scrub is ranked as G5S4 by CDFG (2007D), indicating that it is "demonstrably widespread, abundant, and secure" across its entire range, but is "apparently secure" within the state of California.

[2] NA = Not Applicable. A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

[3] U = Unranked. Global rank has not yet been assessed.

Southern Willow Scrub (61.208.00/NA). Southern willow scrub does not have a global or state ranking.

Shrub Tamarisk (63.810.02/U). Shrub tamarisk does not have a global or state ranking.

Riparian Forest and Woodland

Southern Coast Live Oak Riparian Forest (71.060.20/G5S4). Southern coast live oak riparian forest is ranked as G5S4 by CDFG (2007D), indicating that it is "demonstrably widespread, abundant, and secure" across its entire range, but is "apparently secure" within the state of California.

Southern Cottonwood–Willow Riparian (61.130.02/G4S3). Southern cottonwood–willow riparian forest is ranked as G4S3 by CDFG (2007D), indicating that it is "apparently secure" across its entire range, but is "vulnerable to extirpation or extinction" within the state of California.

4.5.3.4.5 Special-Status Plant Species

Information compiled from the literature review, (see **Subsection 4.5.3.1**, Literature Review), field study observations listed in **Table 4.5-6**, and professional judgment were used to generate a list of special-status plant species that were observed or have the potential to occur within the Project area, including Project construction zones and designated open space areas. For the purposes of the analysis presented in this subsection, special-status species are defined as plants that:

- Have been designated as either rare, threatened, or endangered by CDFG or the USFWS and are protected under either the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq*.) or federal Endangered Species Act (ESA) (16 U.S.C. § 1531 *et seq*.); or meet the CEQA definition for endangered, rare, or threatened (Cal. Code Regs., tit. 14, § 15380(b),(d));
- Are candidate species being considered or proposed for listing under these same acts; or
- Are of expressed concern to resource/regulatory agencies or local jurisdictions. This includes those plants included on CDFG Special Plants List (2008) as well as Lists 1, 2, 3, or 4 of the CNPS Inventory of Rare and Endangered Plants of California (CNPS Inventory); species of undescribed taxa; or species designated as special status by the County of Los Angeles. Plants included on the CNPS Inventory are classified as follows:
    - List 1A: plants presumed extinct in California;
    - List 1B: plants rare, threatened, or endangered in California and elsewhere;
    - List 2: plants rare, threatened, or endangered in California, but more common elsewhere;
    - List 3: plants about which more information is needed (a review list); and
    - List 4: plants of limited distribution (a watch list).

In **Subsection 4.5.3.1**, Literature Review, **Table 4.5-7** includes those special-status plant species observed within the Project area and **Table 4.5-8** includes those special-status plant species not likely to occur on site. Those special-status plant species observed within the Project area are carried through the existing conditions descriptions and impacts analyses of this EIS/EIR. Those special-status plant species not likely to occur on site are not analyzed further in this EIS/EIR.

Fifteen special-status plants have been identified in the Project area during plant surveys conducted between 2001 and 2007. These species include San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), an undescribed species of everlasting (*Gnaphalium* sp.), Parish's sagebrush (*Artemisia tridentata* ssp. *parishii*), an undescribed species of sunflower (*Helianthus* sp. *nova*), southern California

black walnut (*Juglans californica* var. *californica*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), late-flowered mariposa lily (*Calochortus weedii* var. *vestus*), Plummer's mariposa lily (*Calochortus plummerae*), island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*), Peirson's morning glory (*Calystegia peirsonii*), oak-leaved nemophila (*Nemophila parviflora* var. *quercifolia*), an undescribed species of navarretia (*Navarretia ojaiensis*), mainland (holly-leaf) cherry (*Prunus ilicifolia* ssp. *ilicifolia*), and oak trees (*Quercus* spp.). Of these species, only San Fernando Valley spineflower is state-listed; none are federally-listed. These 15 species are shown in **Table 4.5-18. Figure 4.5-7** (Special-Status Plant Species Occurrences) depicts the locations of the listed San Fernando Valley spineflower and six non-listed species (late-flowered mariposa lily, Plummer's mariposa lily, slender mariposa lily, undescribed everlasting, Ojai navarretia, and undescribed sunflower). The listed San Fernando Valley spineflower is also shown in greater detail on **Figures 4.5-25** through **4.5-30**. These species are discussed in more detail below.

Table 4.5-18
Special-Status Plant Species Documented on the Project Site

Common Name *Scientific Name*	Sensitivity Status Federal	State	CNPS	Habitat	Area Where Observed
San Fernando Valley spineflower *Chorizanthe parryi* var. *fernandina*	FC	CE S1.1	1B.1	California sagebrush scrub and associations, California annual grasslands, or at the edge of agricultural fields on mesas	Specific Plan, VCC, and Entrada areas
undescribed everlasting *Gnaphalium* sp. *nova*[a]	—	—	*	Alluvial sage scrub (alluvial benches)	Specific Plan and VCC areas
undescribed sunflower *Helianthus* sp. *nova*	—	—	*	Freshwater springs and adjacent seeps.	A sunflower population was discovered in 2002 at Middle Canyon Spring, within the Specific Plan site. It is currently being described as a new species by Dr. David Keil, California Polytechnic State University, San Luis Obispo (Mary Meyer personal communication October 2006).
island mountain-mahogany *Cercocarpus betuloides* var. *blancheae*	—	S3.3	4.3	Closed-cone coniferous forest and chaparral	Specific Plan, Entrada, and Salt Creek areas
late-flowered mariposa lily *Calochortus weedii* var. *vestus*	—	S2.2	1B.2	Chaparral and coastal woodland and sometimes riparian woodland	Specific Plan area
mainland cherry *Prunus ilicifolia* ssp. *ilicifolia*	—	—	—	Undifferentiated chaparral, big sagebrush scrub, and river wash	Specific Plan, VCC, and Entrada areas
oak trees *Quercus* spp.	—	—	—	Oak woodlands and savannahs	Specific Plan, Salt Creek, VCC, and Entrada areas
oak-leaved nemophila *Nemophila parviflora* var. *quercifolia*	—	S3.3	4.3	Cismontane woodland and lower montane coniferous forest	Specific Plan area
Ojai navarretia *Navarretia ojaiensis*	—	S2	1B.1	Openings in California sagebrush, grasslands, and sparsely vegetated valley needle grasslands	Salt Creek area
Parish's sagebrush *Artemisia tridentata* ssp. *parishii*	—	—	—	Big sagebrush scrub	This species is considered special status by the County of Los Angeles. Observed in big sagebrush scrub within the Specific Plan and Salt Creek areas. Potential to occur within

Table 4.5-18
Special-Status Plant Species Documented on the Project Site

Common Name *Scientific Name*	Sensitivity Status Federal	State	CNPS	Habitat	Area Where Observed
					the Entrada planning area.
Peirson's morning-glory *Calystegia peirsonii*	—	S3.2	4.2	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland	Specific Plan, Salt Creek, VCC, and Entrada areas
Plummer's mariposa lily *Calochortus plummerae*	—	S3.2	1B.2	Chaparral, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland	Specific Plan area
slender mariposa lily *Calochortus clavatus* var. *gracilis*	—	S2.2	1B.2	Chaparral, coastal scrub, and grasslands	Specific Plan, Salt Creek, VCC, and Entrada areas
southern California black walnut *Juglans californica* var. *californica*	—	S3.2	4.2	Chaparral, cismontane woodland, and coastal scrub/alluvial	Specific Plan, Salt Creek, VCC, and Entrada areas
southwestern spiny rush *Juncus acutus* ssp. *leopoldii*	—	S3.2	4.2	Coastal dunes (mesic), meadows and seeps (alkaline seeps), and marshes and swamps (coastal salt)	Specific Plan area

[a] Some experts identify this species as white-headed cudweed (*Gnaphalium leucocephalum*), which is a CNPS List 2.2 species (S3.2). See the analysis of the undescribed everlasting in **Subsection 4.5.5.3** for more detail.

Key:

Status:

Federal: FC = Federal Candidate

State: CE = California Endangered; CT = California Threatened; CR = California Rare

CNPS: List 1A = Presumed extinct
List 1B = Plants rare and endangered in California and elsewhere
List 4 = Plants of limited distribution (watch list)

Other: * = Undescribed species, no status currently assigned

4.5.3.4.5.1 *San Fernando Valley Spineflower (*Chorizanthe parryi *var.* fernandina*)*

The San Fernando Valley spineflower is a federal candidate plant species, is state-listed as endangered, and is a CNPS List 1B species. San Fernando Valley spineflower has been observed in four general areas within the Specific Plan area: Airport Mesa, Grapevine Mesa, Potrero Canyon, and San Martinez Grande Canyon. This species has also been observed on the Entrada and VCC planning areas. Within the Project area, most of the plants were found on slopes with a south-facing aspect within openings in sparsely vegetated habitat characterized as open California sagebrush scrub and associations, California annual grasslands, or at the edge of agricultural fields on mesas. Most of the observed San Fernando Valley spineflower were found on soils mapped by the USDA (1969) as slightly eroded to eroded Castaic-Balcom silty clay loam (30% to 50% slopes) or Terrace Escarpments. Plants in the vicinities of Grapevine and Airport mesas were observed downslope of terrace surfaces capped by Zamora clay loam (2% to 9% slopes), with a few plants occurring on artificial fill or alluvium derived from adjacent terrace deposits. Vegetative cover in the area of San Fernando Valley spineflower occurrences ranged from 5% to 100%, but was most commonly between 60% and 80%. The soil type for all mapped San Fernando Valley spineflower occurrences in the Project area consisted of sandy loams. Elevations at San Fernando Valley spineflower locations on site range from approximately 1,000 to 1,300 feet AMSL.

Table 4.5-19 presents the San Fernando Valley spineflower occurrence data for the Project area. These data are depicted in **Figures 4.5-25** through **4.5-30**. Observations of SFVS were made in 2002, 2003, 2004, 2005 2006, and 2007 (Dudek and Associates 2002A, 2002B, 2002C, 2004B, 2004C, 2004E, 2004F, 2004G, 2004H, 2006F, 2006G, 2006H, 2006I, 2006J, 2006K; Dudek 2007F, 2007G, 2007H; FL*x* 2004B, 2005, 2006A). In 2002, surveys estimated 7,814 individuals occupying 0.59 acre. In 2003, surveys estimated populations of San Fernando Valley spineflower totaling 5,947,120 individuals occupying 16.37 acres. In 2004, the total population of San Fernando Valley spineflower was estimated to be 558,388 individuals occupying 5.33 acres. In 2005, the total population of San Fernando Valley spineflower was estimated to be 7,391,813 individuals occupying 11.45 acres. In 2006, the total population of San Fernando Valley spineflower was estimated to be 1,773,496 individuals occupying 8.49 acres. In 2007, the total population of San Fernando Valley spineflower was estimated to be 760 individuals occupying 0.12 acre. The surveys conducted for San Fernando Valley spineflower throughout the High Country SMA and Salt Creek area were negative.

Table 4.5-19
San Fernando Valley Spineflower Population and Area Occupied

San Fernando Valley Spineflower Population and Area Occupied												
	2002		2003		2004		2005		2006		2007	
Location	**Pop.**	**Acres**	**Pop.**	**Acres**	**Pop.**	**Acres**	**Pop.**	**Acres**	**Pop.**	**Acres**	**Pop.**	**Acres**
Airport Mesa	463	0.42	1,114,559	6.84	38,236	2.11	1,706,335	4.37	1,216,612	4.13	226	0.07
Grapevine Mesa	7,256	0.11	2,121,160	4.07	458,235	1.55	4,261,660	2.86	33,596	1.40	76	0.00
Potrero Canyon	—	—	233,328	1.45	13,326	0.47	326,654	1.06	88,659	0.63	67	0.01
San Martinez Grande	75	0.03	1,124,388	2.10	1,387	0.62	123,527	1.39	1,050	1.02	73	0.02
Specific Plan area (Subtotal)	*7,794*	*0.56*	*4,593,435*	*14.46*	*511,184*	*4.75*	*6,418,176*	*9.67*	*1,339,917*	*7.19*	*442*	*0.10*
Entrada	20	0.03	1,183,504	1.45	45,733	0.50	750,482	1.30	229,174	0.95	258	0.02
VCC	—	—	170,181	0.46	1,471	0.09	223,155	0.48	204,405	0.36	60	0.00
Total	**7,814**	**0.59**	**5,947,120**	**16.37**	**558,388**	**5.33**	**7,391,813**	**11.45**	**1,773,496**	**8.49**	**760**	**0.12**

4.5.3.4.5.2 *Undescribed Everlasting (*Gnaphalium *sp.* nova*)*

Because this plant is undescribed (a physical description of the plant with known distribution and species name has not been published in a peer reviewed publication) and its extent and distribution are unknown, for the purposes of this EIS/EIR it is considered a special-status species.

The undescribed everlasting was documented within the Specific Plan area during the 2003, 2004, 2005, and 2007 field seasons. Two main populations of this undescribed species, totaling about 530 individuals, were documented in 2003 in the Santa Clara River corridor near the mouth of Long Canyon and in Castaic Creek south of SR-126 within the Specific Plan area. During the 2004 surveys, these two occurrences were noted again with about 700 plants. In addition, a population of about 250 individuals was observed in the portion of Castaic Creek west of the I-5 Bridge and east of Commerce Center Drive within the VCC planning area. In 2005, the two Specific Plan area occurrences consisted of approximately 800 individuals and five individuals, while the VCC occurrences consisted of approximately 65 individuals. During 2007 surveys, the VCC occurrence was estimated at approximately 350 individuals; one main occurrence and a number of smaller occurrences were documented within the Specific Plan area, totaling approximately 85 individuals. These occurrences are primarily on secondary alluvial benches. The vegetation around these plants consists of sparsely vegetated open river wash. **Table 4.5-20** provides a summary of population data for the undescribed everlasting that occurs within VCC and the Specific Plan area.

Table 4.5-20
Population Data for the Undescribed Everlasting That Occurs within VCC and the Specific Plan Area

	Undescribed Everlasting Individuals Observed			
Location	**2003**	**2004**	**2005**	**2007**
Specific Plan area	530	712	805	85
High Country SMA	—	—	—	—
Salt Creek area	—	—	—	—
RMDP (Specific Plan area, High Country SMA, Salt Creek area)	530	712	805	85
VCC	—	270	65	350
Entrada	—	—	—	—
Total	**530**	**982**	**870**	**435**

4.5.3.4.5.3 *Undescribed Sunflower (*Helianthus *sp.* nova*)*

The undescribed sunflower has no federal, state or CNPS status. A population of *Helianthus* was found in 2002 at Castaic Spring, on the south side of the Santa Clara River between Middle Canyon and San Jose Flats within the Specific Plan site. Ten or fewer plants were observed rooted in saturated wetland soils in dense vegetation including cattails, tules, stinging nettle and wild grape. The species is a perennial with a near-surface tuber that produces annual growth stems that are four meters or more in length (16 to 20 feet). The stems produce abundant flowers in late summer through the fall and sometimes topple from their weight and lay about on the vegetation beneath. In 2002, more than 300 flowering stems were estimated in an area under 1 acre in size and appeared to be associated with three to five different clumps of sunflower.

Following its initial discovery, the sunflower was presumed to be the extinct Los Angeles sunflower (*H. nuttallii* ssp. p*arishii*). Further investigations revealed the Castaic Spring sunflower contained 68 chromosomes and therefore is apparently a tetraploid, while its closest known relatives are a hexaploid (*H. californicus*, n=51) and a diploid (*H. nuttallii* ssp. *Nuttallii*, n=17) (Soza, 2003). Based on pollen electron microscopy, it is likely that the *Helianthus* species in question is a hybrid between *H. nuttallii* and *H. californicus* or an intermediate evolutionary step between the two species (Porter and Fraga 2004). Based upon its apparent status as possibly a new species of hybrid origin, Dr. David Keil at the California Polytechnic State University, San Luis Obispo, is currently working on publishing it as a new species. Dr. Keil has indicated that the species is probably of hybrid origin from the Pleistocene period, when wetter, cooler conditions occurred and species of *Helianthus* were more widespread (Mary Meyer, personal communication, October 2007).

A population of 10 undescribed sunflowers was found in 2002 growing in water-saturated soil and gravel along the margin of a slight rise within the Middle Canyon Spring, which drains into the south side of the Santa Clara River just upstream of its confluence with Castaic Creek. This sunflower grows to a height of 10 to 16 feet, rising above surrounding vegetation, and remains in the sun throughout most of the day.

4.5.3.4.5.4 *Island Mountain-Mahogany (*Cercocarpus betuloides *var.* blancheae*)*

The island mountain-mahogany is a CNPS List 4 (S3.3) plant, but it has no federal status. It is an evergreen shrub or shrubby tree that is typically found in chaparral and closed-cone coniferous forests in Los Angeles and Ventura counties, as well as on several of the Channel Islands. Within the Specific Plan, Salt Creek, and Entrada areas, island mountain-mahogany occurs as an occasional component of chaparral communities at the base of north-facing slopes. The species has not been detected in the VCC planning area. Given the low sensitivity status of the species, individual island mountain-mahogany plants have not been mapped.

4.5.3.4.5.5 *Late-Flowered Mariposa Lily (*Calochortus weedii *var.* vestus*)*

The late-flowered mariposa lily is a CNPS List 1B (S2.2) plant, but it has no federal status. This species is typically found in dry, open chaparral and coastal woodland but is sometimes found in riparian woodland on serpentine soils. An estimated 150 individuals observed in two occurrences of this species were mapped on steep ridges and slopes in chaparral within the High Country SMA in 2003.

4.5.3.4.5.6 *Mainland Cherry (*Prunus ilicifolia *ssp.* ilicifolia*)*

The mainland cherry has no state or federal sensitivity status, but it is locally protected through the County of Los Angeles. This large shrub to tree was incidentally observed from 2002 to 2006 in the RMDP, Entrada, and VCC planning areas as an occasional component of undifferentiated chaparral, big sagebrush scrub, and river wash. Given the low sensitivity status of the species, individual mainland cherry trees were not mapped.

4.5.3.4.5.7 *Oak Trees (*Quercus *spp.)*

Oak trees have no state or federal sensitivity status but impacts to oak trees are regulated under the CLAOTO and CEQA (PRC 21083.4). The vast majority of the oaks on the site are coast live oak (*Q. agrifolia*), but valley oak (*Q. lobata*), scrub oak (*Q. berberidifolia*), interior live oak (*Q. wislizeni*), and Alvord oak (*Q. alvordiana*) (a hybrid intermediate between blue oak (*Q. douglassii*) and Tucker oak (*Q. john-tuckeri*)) also occur. Oak tree surveys have been conducted within proposed development areas (including a 200-foot buffer). Oak tree surveys were not conducted within protected areas (*e.g.*, the High Country SMA and River Corridor SMA, proposed spineflower preserves, and Open Areas); the number of oak trees in these areas has been estimated. The surveys identified an estimated 23,294 oak trees potentially regulated by CLAOTO and PRC 21083.4.

4.5.3.4.5.8 *Oak-Leaved Nemophila (*Nemophila parviflora *var.* quercifolia*)*

The oak-leaved nemophila is a CNPS List 4 (S3.3) plant, but it has no federal status. This species typically inhabits cismontane woodlands and lower montane coniferous forests. In 2003 and 2004, one occurrence of oak-leaved nemophila was found on the Project site within the Specific Plan area along a northeast-facing slope in an oak woodland east of Grapevine Mesa. Given the low sensitivity status of the species, this occurrence was not mapped.

4.5.3.4.5.9 *Ojai Navarretia (*Navarretia ojaiensis*)*

The Ojai navarretia is a CNPS List 1B (S2) plant, but it has no federal status. The Ojai navarretia was documented within the Salt Creek watershed during the 2003 field season. The

Ojai navarretia polygons were noted in grasslands and in openings in California sagebrush and sparsely vegetated valley needlegrass grasslands.

4.5.3.4.5.10 *Parish's Sagebrush (*Artemisia tridentata *ssp.* parishii*)*

Parish's sagebrush is considered special status by the County of Los Angeles, but it has no federal, state, or CNPS status. This subspecies co-occurs with the more common big sagebrush (*Artemisia tridentata* ssp. *tridentata*). According to The Jepson Manual (Hickman 1993), the differentiating characteristics between the two subspecies in question are as follows: drooping inflorescence branches and hairy fruit in subspecies *parishii* and erect to spreading inflorescence branches and glandular fruit in subspecies *tridentata*. These differences are confirmed by Shultz (2006A, 2006B). Parish's sagebrush occurs along coastal ranges in Baja California and southern California, extending inland to regions south of the Great Basin (Shultz 2006A, 2006B). It is considered regionally rare by local botanists (Mary Meyer, personal communication, October 2007).

Artemisia tridentata plants were evaluated within the Landmark Village portion of the Specific Plan area in November 2005. There are big sagebrush plants with drooping inflorescence branches and erect inflorescence branches that co-occur there, so collections of both were made. After analysis of the characteristics of numerous samples, including examination of the fruits under a microscope, it was determined that both subspecies probably occur there. However, it appears that these two subspecies may hybridize, as the full range of characteristics (drooping and erect inflorescence branches and hairy and glandular fruit) were found among the collected specimens. The characteristics were generally consistent among individual plants that seemed to fit into either subspecies *parishii* or subspecies *tridentata* (*i.e.*, a plant with drooping inflorescence branches and hairy fruit had drooping inflorescence branches and hairy fruit throughout the plant). Plants that appeared to be hybrids had mixed characters throughout.

Observations of Parish's sagebrush were made in 2006 in the Salt Creek watershed and the Specific Plan area. In both areas, plants were found primarily intermixed with big sagebrush. This species was not observed in the Entrada planning area, but there is suitable big sagebrush scrub habitat on site where Parish's sagebrush potentially exists. There is no big sagebrush scrub found on the VCC planning area, and this species has not been observed within the VCC planning area.

4.5.3.4.5.11 *Peirson's Morning-Glory (*Calystegia peirsonii*)*

The Peirson's morning-glory is a CNPS List 4 (S3.2) plant, but it has no federal status. This species is typically found in chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest, and grasslands. While never abundant, Peirson's morning-glory is widespread on site and was observed on ridges and slopes, weakly climbing over chaparral, coastal scrub, and grasslands throughout the RMDP, VCC, and Entrada areas. Given the low sensitivity status of the species, observations were not mapped.

4.5.3.4.5.12 *Plummer's Mariposa Lily (*Calochortus plummerae*)*

The Plummer's mariposa lily is a CNPS List 1B (S3.2) plant, but it has no federal status. This species is typically found in chaparral, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland, often on granitic and/or rocky soils. Three polygons and two point locations of Plummer's mariposa lily were mapped within the High Country SMA in 2006, with an estimated number of approximately 78 individuals.

4.5.3.4.5.13 *Slender Mariposa Lily (*Calochortus clavatus *var.* gracilis*)*

The slender mariposa lily is a CNPS List 1B (S1.1) plant, but it has no federal status. This species is typically found in chaparral, coastal scrub, and grasslands, often on clay and/or rocky soils. Slender mariposa lily was documented within the Project area from 2002 through 2006. Within the VCC portion of the Project area, this species was found primarily on northwest- and southwest-facing ridges and slopes located just east of Hasley Canyon. Within the Entrada area, this species was found primarily on south-facing slopes (70% of all individuals identified) and, to a lesser extent, on southeast-facing slopes (20% of all individuals identified). Within the Specific Plan area, this species was found primarily on east-, northeast-, and southwest-facing ridges and slopes in the following areas: the San Martinez Grande Canyon, Chiquito Canyon, Off-Haul Canyon, Potrero Canyon, Long Canyon, Middle Canyon, Grapevine Mesa, and Airport Mesa areas as well as the lower Castaic Creek area. This species was also found primarily on east-, northeast-, and southwest-facing ridges within the High Country SMA and Salt Creek area. Occurrences of the lily throughout the RMDP and SCP areas were typically observed in California sagebrush, California buckwheat, and California annual grasslands, and generally were mapped in areas of high vegetative cover and a variety of soil types (*e.g.*, gravelly loam, silty loam, sandy loam, clay loam, and rocky clay). **Table 4.5-21** presents the slender mariposa lily occurrence data for the Project area.

Table 4.5-21
Slender Mariposa Lily Summary of Occurrence Data

	Estimated Number of Individuals by Year				
Project Area	**2002**	**2003**	**2004**	**2005**	**2006**
Specific Plan area (including High Country SMA)	Not observed	7,592	64,888	3,102	692
Salt Creek area	Not surveyed	25,965	Not surveyed	Not surveyed	1
VCC	Not observed	500	4	598	Not observed
Entrada	Not observed	7,870	405	3,903	Not observed

4.5.3.4.5.14 *Southern California Black Walnut (*Juglans californica *var.* californica*)*

The southern California black walnut is a CNPS List 4 (S3.2) plant, but it has no federal status. This species typically inhabits chaparral and cismontane woodlands with Miocene–Pliocene shale and coastal scrub with alluvial soils. This large shrub to tree was incidentally observed in the Specific Plan area in 2002, 2003, and 2004. Observations of this species were made within the High Country SMA and Salt Creek area in 2003 and 2006 and within the VCC planning area in 2004 and 2005. Southern California black walnut was observed within the Entrada planning area as an occasional component of mixed chaparral, coastal scrub, and alluvial scrub in 2004 and 2005. Within the Specific Plan area, southern California black walnut dominates California walnut woodland and is found as an occasional component of chaparral, coastal scrub, and oak woodland. Within the VCC planning area, an individual southern California black walnut occurs within southern cottonwood–willow riparian forest along the south side of Castaic Creek. Occurrences of this species were not mapped due to its low sensitivity status.

4.5.3.4.5.15 *Southwestern Spiny Rush (*Juncus acutus *ssp.* leopoldii*)*

The southwestern spiny rush is a CNPS List 4 (S3.2) plant, but it has no federal status. This species is considered locally and regionally rare by local botanists and has been documented from 10 vouchered collections from LA County, half of which are on Santa Catalina Island (DMEC 2007 comment letter dated January 30 2007, Landmark Village DEIR).

This stout, robust perennial herb is found primarily on coastal dunes with mesic soils, meadows and alkaline seeps, and marshes and coastal salt swamps. Within the Specific Plan area, southwestern spiny rush individuals were observed annually from 2001 through 2006. Southwestern spiny rush is known to occur in bulrush–cattail wetland, coastal and valley freshwater marsh, and herbaceous wetland within the Specific Plan area. The 2001 populations were found in three locations in secondary channels of the floodplain of the Santa Clara River on flat terrain consisting of alluvial soils; elevations ranged from 800 to 900 feet AMSL and plants were associated mostly with wetland species. The 2002 observations (96 clumps) were made at River Village (now referred to as Landmark Village) and at the Water Reclamation Plant site. The River Village populations consisted of 10 clumps of southwestern spiny rush found with mulefat (*Baccharis salicifolia*) and bulrush (*Schoenoplectus microcarpus*) on a low terrace in the riverbed at 925 feet AMSL. Four populations at the Water Reclamation Plant site were documented in secondary channels and on a low terrace on flat terrain at about 850 feet AMSL. The plants at both the River Village and the Water Reclamation Plant sites occurred on alluvial soils and were associated mostly with wetland species. In 2003, 2004, 2005, and 2006, individuals were found to be occasional in mesic riparian areas along the Santa Clara River. Additional surveys in 2004 documented five locations with a total of about 15 plants along the

edges of the western portion of the Santa Clara River. This species is not numerically abundant on site and occurrences of this species were not mapped due to its low sensitivity status.

4.5.3.4.6 Special-Status Wildlife Species

Information compiled from the literature review (see **Subsection 4.5.3.1**, Literature Review), field study observations listed in **Table 4.5-6**, and professional judgment were used to generate a list of special-status wildlife species that were observed or have the potential to occur within the Project area, including Project construction zones and designated open space areas. For the purposes of the analysis presented in this subsection, special-status species are defined as wildlife that:

- Have been designated as either rare, threatened, or endangered by CDFG or the USFWS and are protected under either the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq*.) or federal Endangered Species Act (ESA) (16 U.S.C. § 1531 *et seq*.); or meet the CEQA definition for endangered, rare, or threatened (Cal. Code Regs., tit. 14, § 15380(b),(d));
- Are candidate species being considered or proposed for listing under these same acts;
- Are fully protected by the California Fish and Game Code sections 3511, 4700, 5050, or 5515;
- Are of expressed concern to resource/regulatory agencies or local jurisdictions. This includes those wildlife that are considered a state Species of Special Concern; are on CDFG Watch List; are designated as a federal Bird of Conservation Concern; or considered a state Special Animal; or
- Are wildlife that the California Natural Diversity Database (CNDDB) is interested in tracking.

In **Subsection 4.5.3.1**, Literature Review, **Table 4.5-9** includes those special-status wildlife species observed within the Project area, **Table 4.5-10** includes those special-status wildlife species potentially occurring on site, and **Table 4.5-11** includes those special-status wildlife species not expected to occur or rarely occurring on site. In most cases, those special-status wildlife species observed within the Project area or potentially occurring on site are carried through the existing conditions descriptions and impacts analyses of this EIS/EIR. There are two special-status species observed in the Project area that are not carried through in this analysis: great egret and great blue heron. While both species are commonly observed on site, they are not carried forward in the analysis because their special status designation is based on the presence of rookeries. During the many surveys conducted in riparian habitats from 1988 through 2007, no rookeries for either species have been observed in the Project area. For this reason, they are included in **Table 4.5-11,** Special-Status Wildlife Species Not Expected to Occur or Rarely Occurring on Site. Those special-status wildlife species not expected to occur or rarely occurring on site are not analyzed further in this EIS/EIR.

As described above in **Tables 4.5-9** and **4.5-10**, 75 special-status wildlife species are addressed in this analysis, with each assigned to one of the following two headings: (1) special-status wildlife species observed within the Project area (addressing the special-status wildlife species observed within the RMDP, VCC, and Entrada areas during the course of various field surveys) and (2) special-status wildlife species not observed within the Project area. Under these two headings, the special-status species are categorized under six general guilds: birds (raptors, riparian, upland grassland, upland scrub and chaparral, and upland woodland), bats, invertebrates (butterflies and aquatic mollusks), fish, reptiles and amphibians (low mobility and semi-aquatic), and mammals (low mobility, moderate mobility, and high mobility).

In total, 59 special-status species have been observed within the Project area during the course of various surveys conducted from 1988 to 2008.

4.5.3.4.6.1 *Special-Status Wildlife Species Observed within the Project Area*

RMDP

Birds

Raptors

American Peregrine Falcon (*Falco peregrinus anatum*). A subspecies of the peregrine falcon, the American peregrine falcon is listed as endangered under the California Endangered Species Act (CESA) and is also a California Fully Protected species. On October 11, 2007, the California Fish and Game Commission designated the American peregrine falcon as a candidate for delisting under CESA (California Regulatory Notice Register 2007, p. 1856). Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. One American peregrine falcon was observed hunting along the Santa Clara River Corridor near the Grapevine Mesa area within the Specific Plan area by Guthrie in July 2000 (Guthrie 2000C). No other occurrences of this species have been documented on site during annual bird surveys between 1988 and 2007. American peregrine falcons have never been documented nesting on the Project site.

California Condor (*Gymnogyps californianus*). The California condor is federally and state listed as endangered and is also a California Fully Protected species. California condors require vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting (Zeiner *et al.* 1990A). Until April 2008, California condors had not been known to nest or land within the Project area in the last 25 years (Bloom Biological

2007A, 2008). In April 2008, a California condor was observed feeding on a dead calf in a Potrero side canyon by wildlife biologist Chris Niemela (pers. comm. M. Carpenter, Newhall Ranch 2008). No other mention of California condor observations have been made during numerous other plant and wildlife surveys conducted over the past 30 years within various portions of the Project area.

Cooper's Hawk (*Accipiter cooperii*). The Cooper's hawk is on CDFG Watch List. Cooper's hawks are found in areas with dense stands of live oak, riparian areas, or other forest communities near water (Zeiner *et al.* 1990A). The Cooper's hawk frequents landscapes where wooded areas occur in patches and groves and often uses patchy woodlands and edges with snags for perching (Beebe 1974). The Cooper's hawk has been regularly observed within riparian and oak woodland habitats over multiple years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River within riparian scrub and woodland habitat (Guthrie 1988–1990, 1991A–B, 1992, 1993A–B, 1994A–B, 1995A–B, 1996A–B, 1997A–B, 1998A–B, 1999A–C, 2000B–C, 2000E–F, 2001A–B, 2002A, 2002C, 2003A–B, 2004F, 2004H–I, 2005A–B, 2006A–C), within portions of the Santa Clara River by Labinger and Greaves in 1995, 1996, 1997, and 1999 (Labinger *et al.* 1995, 1996, 1997A–B; Labinger and Greaves 1999A). This species is known to be a year-round resident within the Project area (Bloom Biological, Inc. 2007A). The Cooper's hawk has been observed nesting within the Specific Plan area west of Grapevine Mesa in the undisturbed dry canyon woodlands (Guthrie 2000B).

Ferruginous Hawk (*Buteo regalis*). The ferruginous hawk is on CDFG Watch List is a Bird of Conservation Concern. The ferruginous hawk forages in open grasslands, agriculture, sagebrush flats, desert scrub, surrounding valleys in low foothills, and fringes of pinyon–juniper habitats (Polite and Pratt 1999). On site, has been observed in the eastern alfalfa fields, Wolcott agricultural fields, Potrero Canyon, and other agriculture fields along the Santa Clara River in winter 2008 (Bloom Biological, Inc. 2008). The Project area is outside of the species' breeding range and it is not expected to nest on site.

Golden Eagle (*Aquila chrysaetos*). The golden eagle is on CDFG Watch List and a California Fully Protected species. The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner *et al.* 1990A). On site, this species has been occasionally observed during the annual bird surveys conducted from 1988 through 2007 along the Santa Clara River. Observation of a single golden eagle soaring over the Santa Clara River was

recorded on April 22, 1993 (Guthrie 1993A). Two golden eagles were flushed out of coast live oak woodlands west of Grapevine Mesa on the RMDP Project site (Guthrie 2000B).

Loggerhead Shrike (*Lanius ludovicianus*). The loggerhead shrike is a Bird of Conservation Concern and has been designated by CDFG as a California Species of Special Concern. The species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perching and butchering sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas and can sometimes be found in mowed roadsides, cemeteries, and golf courses. The loggerhead shrike is a breeding resident on site (Bloom Biological, Inc. 2007A). It has been observed to be fairly common within California sagebrush scrub and grasslands in the Specific Plan area (Guthrie 1993B, 1996A, 2000A–B, 2002C, 2004A, 2004E, 2005B; Labinger *et al.* 1995; Lemons 2008; Bloom Biological, Inc. 2007A).

Long-Eared Owl (*Asio otus*). The long-eared owl has been designated by CDFG as a California Species of Special Concern. The long-eared owl primarily uses riparian habitat for roosting and nesting, but can also use live oak thickets and other dense stands of trees (Zeiner *et al.* 1990A). It appears to be more associated with forest edge habitat than with open habitat or forest habitat (Holt 1997). Dudek observed a long-eared owl during wildlife transect surveys within the Specific Plan area in live oak woodland south of Via Canyon during fall 2005 (Dudek 2006B). The observed individual was not nesting. The species was not observed during 2007 surveys despite several nights spent camping in oak woodlands surrounding the Landmark Village project area (Bloom Biological, Inc. 2007A).

Merlin (*Falco columbarius*). The merlin is on CDFG Watch List. The merlin uses a wide variety of semi-open to open habitats during breeding and wintering (Garrett and Dunn 1981; Sodhi *et al.* 2005). Individuals frequent coastlines, grasslands, savannahs, open woodlands, lakes, wetlands, edges, and communities in early successional stages while foraging. In 2007, Bloom Biological made four observations of wintering or migrating merlins between March 4 and March 23 (Bloom Biological, Inc. 2007A). One male and one female were documented hunting over agriculture fields bordering riparian habitat near Indian Dunes, which is located east of the Landmark Village site in the Specific Plan area. Merlins were not observed during bird surveys in any other year between 1988 and 2007.

Northern Harrier (*Circus cyaneus*). The northern harrier has been designated by CDFG as a California Species of Special Concern. Northern harriers use a wide variety of open habitats in California, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes (Macwhirter and Bildstein 1996). The species can also forage over coastal sage scrub or other open scrub communities (Bloom Biological, Inc. 2007A). The northern harrier has been observed in or near the Project area infrequently during the 20 years when surveys were conducted (Guthrie 1999B, 2000A). More recently, Dudek observed a northern harrier in the Mission Village area (Dudek 2008B), and in March 2007, Bloom Biological made three separate observations of a single male at different locations in or near the Project area along the Santa Clara River (Bloom Biological, Inc. 2007A).

Prairie Falcon (*Falco mexicanus*). North America's only endemic falcon, the prairie falcon is a Bird of Conservation Concern and is on CDFG Watch List. Additionally, the prairie falcon is a migratory bird protected under the Migratory Bird Treaty Act (16 U.S.C. § 703 *et seq.*) and the USFWS identified the prairie falcon as a Bird of Conservation Concern (USFWS 2002B). Prairie falcons inhabit open habitats in North America, including arid plains and steppe habitats. In the western states they prefer chaparral, desert grasslands, and creosote bush habitats. Surveys conducted by Guthrie detected two individual prairie falcons foraging during various surveys; one prairie falcon was detected on April 7, 2000, in the Potrero Canyon and Long Canyon area, and the other on July 2, 2001, along Castaic Creek between the confluence with the Santa Clara River and I-5 (Guthrie 2000D, 2001A). Dudek biologists detected a prairie falcon within the Salt Creek watershed in late November 2005 and an incidental sighting was made in late August 2007 over Salt Creek within the High Country SMA (Dudek and Associates, Inc. 2006B; Trow, personal observation, 2007).

Sharp-Shinned Hawk (*Accipiter striatus*). The sharp-shinned hawk is on CDFG Watch List. Sharp-shinned hawks prefer riparian forest and woodlands (NatureServe 2007). They are found in a variety of ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats (Joy *et al.* 1984; Zeiner *et al.* 1990A; NatureServe 2007). Sharp-shinned hawks have been observed several times during the course of the avian surveys conducted along the Santa Clara River corridor. Guthrie observed two adults on two separate occasions in 1995 and again in 1997 and 1999 (Guthrie 1995B, 1997A, 1999B). Another sharp-shinned hawk was observed in March 2007 by Bloom Biological (Bloom Biological, Inc. 2007A).

Turkey Vulture (*Cathartes aura*). Although the turkey vulture has no federal or state status, it is being discussed, for the purposes of this report, as a CDFG trust resource. Turkey vultures use a variety of habitats while foraging for both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, nonintensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner *et al.* 1990A). On site, this species has been observed over multiple years during bird surveys conducted from 1988 through 2007 along the Santa Clara River (Guthrie 1993B, 1994B, 1996B, 1997B, 1999B–C, 2000A–B, 2000E–F, 2001A–B, 2002A, 2003B, 2004A, 2004D–F, 2004H, 2005B, 2006A), Dudek (2006B, 2008B), Labinger *et al.* (1995, 1997A–B), and Bloom Biological, Inc. (2007); and off site in the Castaic Junction area by Guthrie (1988, 1990, 1991A, 1993A, 1994A, 1995A, 1996A, 1997A, 1998A, 1999A, 2001A, 2002A, 2003A, 2004I, 2005A, 2006C) and Haglund and Baskin (2000). However, no mapped occurrences of this species were recorded.

Western Burrowing Owl (*Athene cunicularia hypugaea*). The western burrowing owl is a Bird of Conservation Concern and designated by CDFG as a California Species of Special Concern. In California, western burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates 2006). They can inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation. On site, the western burrowing owl has been observed anecdotally at two locations. A single western burrowing owl individual was observed twice at the same location within a four-week period (November and December 2006) in the northern portion of Middle Canyon, east of Airport Mesa, in ruderal habitat. Another individual was observed in December 2006 in Middle Canyon, and again on April 11, 2007 (Miller 2007).

White-Tailed Kite (*Elanus leucurus*). The white-tailed kite is a California Fully Protected species. The white-tailed kite is commonly associated with agriculture areas (Grinnell and Miller 1944). It also inhabits low-elevation grasslands, savannah-like habitats, open sage scrub, meadows, wetlands, and oak woodlands, particularly in areas with a dense population of voles (Waian and Stendell 1970). On the Project site, white-tailed kite has been observed primarily along the Santa Clara River, where it nests in associated riparian woodlands and forages in adjacent grasslands, open sage scrub, and agricultural fields (Guthrie 2005C; Bloom Biological, Inc. 2007A, 2009). It has been observed within the Specific Plan, including High Country SMA and Salt Creek (Guthrie 1994B, 1995B, 1996B, 1997B, 1998A, 1999B, 2000A–C, 2002C, 2003B, 2004D, 2004F;

Labinger *et al.* 1995, 1996, 1997A–B; Labinger and Greaves 1999A; Dudek 2006B; Bloom Biological, Inc. 2007A); and off site within Castaic Junction (Guthrie 1988–1990, 1993A, 1994A, 1995A, 1998B, 1999A, 2000E, 2001A, 2003A, 2004F, 2005A, 2006C; Dudek 2006E; Bloom Biological, Inc. 2007A) and within the Santa Clara River and adjacent agricultural areas just upstream of Las Brisas Bridge in Ventura County and just west of the Ventura/Los Angeles County line (Bloom Biological, Inc. 2009).

Riparian

Black-Crowned Night-Heron (*Nycticorax nycticorax*). The black-crowned night heron is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. Its habitat requirements are varied, including all types of wetland areas, including fresh, brackish, and salt water ecosystems and even man-made ditches, canals, reservoirs, and wet agricultural fields (IHRMP 2001G). On site, this species was observed early in the year and is thought to be a wintering or migratory species within the Project site. In the most recent survey, several adults and juveniles were observed along the Santa Clara River after dusk and before dawn (Bloom Biological, Inc. 2007A). Observations of the species were mapped along the Santa Clara River in the RMDP Project area south of Landmark Village and near the Ventura County line (Bloom Biological, Inc. 2007A). No roosts or rookeries (nesting colonies) have been detected during the surveys within or adjacent to the Project site during any of the surveys that have been conducted over the years.

Least Bell's Vireo (*Vireo bellii pusillus*). The least Bell's vireo was state listed as endangered in 1980 and federally listed as endangered by the USFWS in 1986 (51 FR 16474). The USFWS made a final critical habitat designation for the least Bell's vireo in 1994 (59 FR 4845). Least Bell's vireos primarily occupy riverine riparian habitats that typically feature dense cover within one to two meters of the ground and a dense, stratified canopy. The least Bell's vireo inhabits low, dense riparian growth along water or along dry parts of intermittent streams and is typically associated with southern willow scrub, cottonwood forest, mulefat scrub, sycamore alluvial woodland, southern coast live oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities. The least Bell's vireo has been observed almost every year along the Santa Clara River within the Specific Plan area (Guthrie 1993B, 1995B, 1996B, 1997B, 1998A, 1999B, 2000C, 2001B, 2002C, 2003B, 2004H, 2005B, 2006A; Labinger *et al.* 1995, 1996, 1997A–B; Labinger and Greaves 1999A; Bloom Biological, Inc. 2007A), and off site in Castaic Junction (Guthrie 1988, 1990, 1991A, 1996A, 1997A, 1998B, 2000E, 2001A, 2002A, 2003A, 2004F, 2004I, 2005A, 2006C; Dudek

2006E; Bloom Biological, Inc. 2007A). Most recently, Bloom Biological observed at least 56 territories and three active nests within the Specific Plan area and adjacent areas (Bloom Biological, Inc. 2007A).

Nuttall's Woodpecker (*Picoides nuttallii*). The Nuttall's woodpecker is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. The Nuttall's woodpecker is primarily found in oak woodlands, to a lesser extent in riparian woodlands, and rarely in conifer forests. Nuttall's woodpecker has been described as a species characteristic of, if not confined to, oak woodlands in California (Lowther 2000). It has been observed nearly every year along the Santa Clara River since surveys began in 1988. Nuttall's woodpeckers are common residents in cottonwood and willow riparian habitat along Santa Clara River, Castaic Creek and other tributaries, and in coast live oak woodlands in adjoining canyons. Bloom Biological recorded three to 14 daily within the RMDP Project area in 2007 (Bloom Biological, Inc. 2007A).

Tricolored Blackbird (*Agelaius tricolor*). The tricolored blackbird is a California Species of Special Concern and a Bird of Conservation Concern with regard to its nesting colony status. It was petitioned for state and federal listing by the Center for Biological Diversity in 2004, but the USFWS made a decision not to warrant protection in December 2006. These birds prefer to breed in freshwater marshes with dense growths of emergent vegetation dominated by cattails (*Typha* spp.) or bulrushes (*Schoenoplectus* spp.), but have also established colonies in willows (*Salix* spp.), blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* spp.). This species has been observed on the Project site during focused bird surveys. Labinger *et al.* (1995) observed a small nesting colony within the Project site; however, the specific location is not known and was not mapped. Migrants have also been observed within the Specific Plan area along the Santa Clara River (Guthrie 1996B, 1999B, County of Los Angeles 2003) and within Potrero Canyon in 1994 (County of Los Angeles 2003). Tricolored blackbird has been observed office along Castaic Creek (Guthrie 1994A, 1995A, 1996A, 1999A, 2006C), and at Castaic Junction (Guthrie 1994A, 2000E, 2001A, 2006C; Dudek 2006E). No breeding colonies have been observed since 1994, despite annual surveys through 2007 as described above.

Vermilion Flycatcher (*Pyrocephalus rubinus*). The vermilion flycatcher is designated by CDFG as a California Species of Special Concern. This species is found in riparian thickets near open, mesic habitats. It breeds in cottonwood, willow, mesquite, oak, sycamore, and other vegetation in desert riparian communities that are located adjacent to irrigated fields, irrigated ditches, or

pastures (Zeiner *et al.* 1990A; Wolf and Jones 2000). A single individual was observed along the Santa Clara River on June 19, 1993 (Guthrie 1993B). This is the only observation of a vermilion flycatcher from any of the many years of surveys both within and adjacent to the Project site, and its location was not mapped.

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*). The yellow-headed blackbird is designated by CDFG as a California Species of Special Concern. This species is not federally listed as threatened or endangered within any part of its range. It is found primarily within prairie wetlands, but it is also commonly found in wetlands associated with quaking aspen parks, mountain meadows, and arid regions. This species has been observed within the Specific Plan area (Guthrie 1996B, 1997B, 1999B, 2001B; Bloom Biological, Inc. 2007A). Bloom Biological observed one individual in an agriculture field within a flock of red-winged blackbirds on April 1, 2007 (Bloom Biological, Inc. 2007A). No nesting colonies have been observed within the Project site.

Yellow Warbler (*Dendroica petechia brewsteri*). The yellow warbler has no federal or state sensitivity status but is designated as a California Species of Special Concern by CDFG. In general, the yellow warbler breeds most commonly in wet, deciduous thickets, especially those dominated by willows, and in disturbed and early successional habitats (Lowther *et al.* 1999). This species has been observed nearly every year within the Specific Plan during avian surveys from 1992 through 2007 (Guthrie 1992, 1993B, 1994B, 1995B, 1996B, 1997B, 1998A, 1999B, 2000C, 2001B, 2002C, 2003B, 2004H, 2005B, 2006A; Labinger *et al.* 1995, 1996, 1997A–B; Labinger and Greaves 1999A; Bloom Biological, Inc 2007A); in the VCC development area from 1988 to 1989 and 1991 to 2006 (Guthrie 1988, 1989, 1991A, 1992, 1993A, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E, 2001A, 2002A, 2003A, 2004F, 2005A, 2006C); and off site in Castaic Junction north of the Entrada development area(Guthrie 1988, 1989, 1990, 1991A, 1992, 1993A, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E–F, 2001A, 2002A, 2003A, 2004F, 2005A, 2006C; Haglund and Baskin 2000; Dudek 2006E; Bloom Biological, Inc 2007A). However, no mapped occurrences of this species were recorded.

Yellow-Breasted Chat (*Icteria virens*). The yellow-breasted chat is designated by CDFG as a California Species of Special Concern. This species is not federally listed as threatened or endangered, but has been listed as threatened, endangered, or of special concern in some states and provinces on the periphery of its range (*e.g.*, Connecticut, New Jersey, New York, Ontario, and British Columbia) (Eckerle and Thompson 2001). In southern California, the yellow-

breasted chat is primarily found in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. On site, this species has been observed On site, this species was observed nesting in riparian thickets in 2007 (Biological, Inc. 2007A) and has also been observed over multiple years during bird surveys conducted from 1988 through 2006 (Guthrie 1988–1990, 1991A, 1992, 1993A–B, 1994A–B, 1995A–B, 1996A–B, 1997A–B, 1998A–B, 1999A–B, 2000B–C, 2000E–F, 2001A–B, 2002A, 2002C, 2003A–B, 2004F, 2004H, 2005A–B, 2006A, 2006C; Labinger *et al.* 1995, 1997B; Labinger and Greaves 1999A).

Upland Grassland

California Horned Lark (*Eremophila alpestris*). The California horned lark is on CDFG Watch List. California horned larks are common and abundant residents in a variety of open habitats, usually where trees and shrubs are absent. California horned larks have been observed regularly foraging in plowed and graded fields near the Santa Clara River within the RMDP Project area Guthrie (1994B, 1995B, 1996B, 1998A, 1999B–C, 2000A–C, 2005B), Labinger *et al.* (1995, 1996, 1997B; Labinger and Greaves 1999A), and Bloom Biological, Inc. (2007A); in the VCC planning area (Guthrie 1990, 1991B, 1992, 1996B, 1997B, 2000C, 2001A, 2002A, 2003A, 2004B, 2005A–B, 2006C; Dudek 2006D); and offsite in the Castaic Junction area (Guthrie 1991B, 1993A, 1994A–B, 1995B, 2000F, 2003A, 2004, 2005A). More recent surveys have observed several individuals in the agricultural fields along the Santa Clara River and a flock of approximately 20 individuals was observed adjacent to the Project site foraging in a dirt agricultural field within the Landmark Village impact area (Bloom Biological, Inc. 2007A).

Upland Scrub and Chaparral

Allen's Hummingbird (*Selasphorus sasin*). The Allen's hummingbird is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range and according to Sauer *et al.* (1996) showed no statistically significant declines in population for the period from 1966 to 1996. The vegetation communities most commonly used by breeding Allen's hummingbirds are coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Allen's hummingbird has been documented numerous times within the RMDP Project area. Five individuals were observed in March and April 2004 in the southern and western portions of Legacy Village, which includes Long, Potrero, and Pico canyons (Guthrie 2004G).

Chipping Sparrow (*Spizella passerina*). The chipping sparrow is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range and Sauer *et al.* (1997) have concluded that continental populations appear healthy. Chipping sparrows prefer open wooded habitats with a sparse or low herbaceous layer and few shrubs, if any (Zeiner *et al.* 1990A). On site, this species has been observed as a common migrant in the RMDP area, and one to 12 individuals were observed near edges of agricultural fields most days in early March (Bloom Biological, Inc. 2007A). The chipping sparrow has been observed over multiple years during bird surveys conducted from 1988 through 2007 along the Santa Clara River within riparian scrub and woodland habitat; however, there are no mapped occurrences of these observations.

Costa's Hummingbird (*Calypte costae*). The Costa's hummingbird is designated by CDFG as a California Special Animal. It has a CNDDB ranking of global: demonstrably widespread, abundant, and secure; subnational: vulnerable to extirpation or extinction. It is not federally listed as threatened or endangered within any part of its range. Primary habitats are desert wash, edges of desert riparian and valley foothill riparian areas, coastal scrub, desert scrub, desert succulent scrub, lower-elevation chaparral, and palm oasis (Zeiner *et al.* 1990A). The species has been observed over multiple years during bird surveys conducted from 1988 through 2006 along the Santa Clara River within riparian scrub and woodland habitat; however, there are no mapped locations for observations.

Rufous Hummingbird (*Selasphorus rufus*). The rufous hummingbird is designated by CDFG as a California Special Animal and is a Bird of Conservation Concern with regard to its nesting colony status. The rufous hummingbird uses a variety of vegetation communities that provide nectar-producing flowers. In its breeding range, the species uses open areas as well as coniferous forests, deciduous woods, riparian thickets, swamps, meadows, agricultural areas, parks, and residential areas (Calder 2006). Rufous hummingbirds have been observed within and near the Project area in several different years. Three rufous hummingbirds were observed in early April of 1999 by Guthrie north of SR-126 in what is now the Homestead West area (Guthrie 1999B). Another individual was observed in late March 2004 by Guthrie within Potrero Valley, Oak Valley, Long Canyon, or Onion Fields (Guthrie 2004D). Another individual was observed in early April of that year in the southern half of the Legacy Village area (Guthrie 2004C), which is adjacent to the Project area just south of Mission Village and east of Potrero Village. No mapped occurrences of this species were recorded.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*). The southern California rufous-crowned sparrow is on CDFG Watch List. This species is not federally listed as threatened or endangered within any part of its range (Collins 1999B). The rufous-crowned sparrow occupies moderate to steep hillsides that are rocky, grassy, or covered by coastal sage scrub or chaparral. The southern California rufous-crowned sparrow has been observed over multiple years as a fairly common resident in the coastal scrub within the Specific Plan area during annual bird surveys. It has been observed foraging upland and near the Santa Clara River (Guthrie 2000A, 2000B, 2001A, 2002C, 2004A, 2004D) and was observed nesting in 2007 (Bloom Biological, Inc. 2007A).

Upland Woodland

Hermit Warbler (*Dendroica occidentalis*). The hermit warbler is considered a CDFG trust resource for the purposes of this analysis. Hermit warblers are found in conifer and mixed forests, shrubland, chaparral, and conifer and mixed woodlands (NatureServe 2007). On site, this species was observed over multiple years during bird surveys conducted from 1988 through 2006 along the Santa Clara River within woodland habitat (Guthrie 1994B, 1996B, 2002C); however, there are no mapped occurrences of these observations. All observed individuals were thought to be migrants.

Lawrence's Goldfinch (*Carduelis lawrencei*). The Lawrence's goldfinch is designated by CDFG as a California Special Animal. Additionally, this species is recognized under the NatureServe system of Natural Heritage Programs as vulnerable at the state level within California and throughout its range and is listed as a Bird of Conservation Concern by the USFWS. Lawrence's goldfinches are found in cropland and hedgerows, shrubland and chaparral, conifer, hardwood and mixed woodlands (NatureServe 2007). On site, this species was observed in upland areas and riparian thickets in 2007 (Bloom Biological, Inc. 2007A) and has been observed over multiple years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River (Compliance Biology 2006A; Guthrie 1988, 1990, 1992, 1993A–B, 1994A, 1996A–B, 1997A–B, 1998A–B, 1999A–B, 2000A–G, 2001A–B, 2002A, 2002C, 2003A–B, 2004C–E, 2004H–I, 2006C; Labinger *et al.* 1996, 1997A–B; Labinger and Greaves 1999A). Two to 70 were recorded daily throughout March, mostly in migrant flocks (Bloom Biological, Inc. 2007A).

Oak Titmouse (*Baeolophus inornatus*). The oak titmouse is designated by CDFG as a California Special Animal. This species is not federally listed as

threatened or endangered within any part of its range. Oak titmice inhabit a variety of habitat types, but are primarily associated with oaks, especially those in warm, dry habitats (Cicero 2000). The oak titmouse is common and abundant in the Project area, nesting on site in cottonwood riparian and coast live oak communities. It has been observed over multiple years along the Santa Clara River in the Specific Plan area. The oak titmouse was observed most recently by Guthrie in 2006 (Guthrie 2006C) and by Bloom Biological in 2007 (Bloom Biological, Inc. 2007A). Bloom Biological reported seeing between two and 14 individuals of this species daily. Most observations of this species were not mapped, but individuals have been sighted along the Santa Clara River and its tributaries.

Bats

Fringed Myotis (*Myotis thysanodes*). The fringed myotis is designated by CDFG as a California Special Animal. The fringed myotis typically occurs in a wide variety of desert, grass, and woodland habitats at middle elevations of 1,200 to 2,850 meters AMSL (3,937 to 9,350 feet) but is known from lower elevations along the west coast and may occur in pine–fir associations at higher elevations (O'Farrell and Studier 1980). There was one acoustic detection of the fringed myotis in the 2004 surveys and there were no acoustic detections or captures of the species in the 2006 surveys. The 2004 detection of the fringed myotis (Impact Sciences, Inc. 2005) was in coast live oak habitat, which is consistent with the known habitat association for this species.

Pallid Bat (*Antrozous pallidus*). The pallid bat is a listed California Species of Special Concern. The pallid bat is locally common in arid deserts (especially the Sonoran life zone) and grasslands throughout the western United States and also occurs in shrublands, woodlands, and forests at elevations up to 2,440 meters AMSL (8,000 feet) (Hermanson and O'Shea 1983; Hall 1981). There were three acoustic detections of the pallid bat in the 2004 acoustic surveys (Impact Sciences, Inc. 2005): two were in coast live oak habitat and one was in southern willow riparian habitat. In 2006, there were both captures and acoustic detections of pallid bats (Johnson 2006).

Pocketed Free-Tailed Bat (*Nyctinomops femorosaccus*). The pocketed free-tailed bat is a listed California Species of Special Concern. The pocketed free-tailed bat primarily occurs in desert habitats but may forage over most available habitats where it occurs (Kumirai and Jones 1990). It occurs at elevations from sea level to 2,500 meters AMSL (7,380 feet). The pocketed free-tailed bat was

acoustically detected in 2006 in lower Potrero Creek. It was not detected in Anabat surveys in 2004 (Impact Sciences, Inc. 2005).

Western Mastiff Bat (*Eumops perotis californicus*). The western mastiff bat is a listed California Species of Special Concern. The western mastiff bat occurs in a wide variety of chaparral, coastal scrub, coniferous and deciduous forest and woodland, and desert scrub habitats (Best *et al.* 1996; Zeiner *et al.* 1990B). The western mastiff bat was audibly detected in 2006 along the Santa Clara River at Walcott Road (Johnson 2006). Western mastiff bat was observed in Piru Canyon and Blue Canyon, north of the Santa Clara River in 1989 (Chris Huntley, personal communication, October 2006).

Based on known habitat associations and its generalist foraging behavior, the western mastiff bat is assumed to potentially use all suitable habitats throughout the Project area for foraging, including riparian, upland woodlands and forests, grasslands, and shrublands (scrubs and chaparral).

Yuma Myotis (*Myotis yumanensis*). The Yuma myotis is a listed California Special Animal. Forests and woodlands are primary habitats for this species, and foraging usually occurs within open, uncluttered habitats and low over water sources, such as ponds, streams, and stock ponds (Brigham *et al.* 1992; Zeiner *et al.* 1990B). Its potential presence was acoustically recorded in middle Potrero Creek and at the plant nursery site in upper Long Canyon in 2006.

Insects (Butterflies)

Monarch Butterfly (*Danaus plexippus*). The monarch butterfly is a listed California Special Animal. The species' distribution is controlled by the distribution of its larval host plants (*i.e.*, various milkweeds, genus *Asclepias*). Individual monarch butterflies were observed during surveys conducted in April and May of 2004 and 2005 as well as during various other wildlife and plant surveys that have been conducted. However, no wintering sites have been observed, and, due to the site's distance from the coast, it is unlikely that the Project area would be used by large numbers of overwintering adults (Compliance Biology, Inc. 2004A).

San Emigdio Blue Butterfly (*Plebulina emigdionis*). The San Emigdio blue butterfly is designated by CDFG as a California Special Animal. This butterfly can be locally abundant in association with its primary host plant, four-wing saltbush (*Atriplex canescens*), but has also been observed in association with quail brush (*A. lentiformis*) (Compliance Biology, Inc. 2004C, 2005). During the 2004 surveys, San Emigdio blue butterfly was documented within the Specific Plan

area in the west-central edge of Potrero Canyon. During the 2005 surveys, five adult San Emigdio blue butterflies were again observed at this location. One San Emigdio blue butterfly was also observed in the High Country SMA at the northwestern edge of Salt Canyon during the 2005 surveys; however, no additional observations of the species were made at this location or other portions of Salt Canyon during the 2005 surveys (Compliance Biology, Inc. 2005).

Fish

Arroyo Chub (*Gila orcutti*). The arroyo chub is listed as a California Species of Special Concern, is considered imperiled regionally and globally under the Natural Heritage Program methodology, and is considered sensitive by the U.S. Forest Service. It occurs in slow-moving or backwater sections of warm to cool (10ºC to 24ºC) streams with mud or sand substrates (ENTRIX 2009). In their collections within the Specific Plan area of the RMDP Project site, ENTRIX (2009) found that the arroyo chub was common to abundant. ENTRIX (2009) describes the arroyo chub as the dominant species of the Santa Clara River within the Project area.

Santa Ana Sucker (*Catostomus santaanae*). The Santa Ana sucker is listed as a California Species of Special Concern throughout its range. Outside of the Newhall Ranch Specific Plan area, populations within the species' natural historic range, including the Los Angeles, San Gabriel, and Santa Ana River basins, are listed federally as threatened. It is also considered sensitive by the U.S. Forest Service, critically imperiled by the Natural Heritage Program, and vulnerable by the IUCN World Conservation Union. The fish are most abundant in cool, shallow streams with good water quality and with streamside riparian vegetation that can provide refuge during seasonal floods and repopulation after flooding (Buth and Crabtree 1982; NatureServe 2007). Santa Ana sucker has been documented within the Specific Plan area throughout the Santa Clara River. In their collections within the Specific Plan area of the RMDP Project site, ENTRIX (2009) found that the Santa Ana sucker was common. Surveys conducted on June 3 and July 14, 2000, found this species within 500 meters upstream and downstream of the I-5 Bridge over the Santa Clara River (Impact Sciences, Inc. 2003A, 2003B; Haglund and Baskin 2000). This species is not expected to occur in Salt Creek.

Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni*). The unarmored threespine stickleback is listed as both state and federally endangered and is a California Fully Protected species. The USFWS (1985) notes that the unarmored threespine stickleback can be found in all areas of streams; however,

they tend to gather in slow-moving and standing water or behind obstructions, at the edges of streams, or in vegetation in faster-moving water. The unarmored threespine stickleback was observed during surveys within the Santa Clara River portion of the Specific Plan in 1988, 1995, 2000, 2002–2005, and 2007 (Aquatic Consulting Services, Inc. 2002A–D; ENTRIX 2009; Haglund 1989; SMEA 1995, 2000; Impact Sciences, Inc. 2003A–C).

Reptiles and Amphibians

Low Mobility

Coast Horned Lizard (*Phrynosoma coronatum*). The coast horned lizard is listed as a California Species of Special Concern. The species is found in a wide variety of vegetation types with the requisite loose sandy soils, including California sagebrush scrub, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest (Klauber 1939; Stebbins 1954). One coast horned lizard was captured during the 2006 pitfall trap surveys and five additional coast horned lizards were incidentally observed during the 2004 reptile surveys (Impact Sciences, Inc. 2006A). The coast horned lizard observed during the 2006 surveys was captured in the eastern portion of the Specific Plan area (in the vicinity of the Potrero Village development area) in an area described as containing sandy soils and riparian and non-native grassland vegetation (Impact Sciences, Inc. 2006A). No location or habitat association information was provided for the coast horned lizards incidentally observed during the 2004 surveys. Coast horned lizard was also observed along the Santa Clara River floodplain, approximately 500 feet south of The Old Road Bridge in 2006 (Chris Huntley, personal communication, October 2006).

Coastal Western Whiptail (*Aspidoscelis tigris*). The coastal western whiptail is designated by CDFG as a California Special Animal. The western whiptail is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. The species is also found in woodland and streamside growth and avoids dense grassland and thick shrub growth. While coastal western whiptails were not trapped or otherwise observed during the pitfall trap surveys, the subspecies was identified as having potential to occur in the Project area (Impact Sciences, Inc. 2006A). Because of observations in the High Country SMA and nearby locations (Compliance Biology, Inc. 2006; Dudek 2006B), the presence of suitable habitat, observance that the Project area is within the range of the subspecies as described by Stebbins (2003), and the fact that the entire Project area was not surveyed by Impact Sciences (2006A) at a level of detail necessary

to determine presence or absence of a particular reptile species, the coastal western whiptail is assumed to be present in the Project area.

Silvery Legless Lizard (*Anniella pulchra pulchra*). The silvery legless lizard is designated by CDFG as a California Species of Special Concern. This species may be found in sparsely vegetated areas in a variety of habitats, including beach dunes, chaparral, California sagebrush scrub, oak woodlands, pine forests, pine–oak woodland, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks (Zeiner *et al.* 1988; Stebbins 2003; Holland and Goodman 1998). Silvery legless lizards were observed within the leaf litter of coast live oak woodlands in Chiquito Canyon. Overall, 23 individual silvery legless lizards were captured and released (Impact Sciences, Inc. 2006A). Silvery legless lizard was also observed at two locations in Long Canyon in 2005 (Chris Huntley, personal communication, October 2006).

Semi-Aquatic

Southwestern Pond Turtle (*Actinemys marmorata pallida*). The southwestern pond turtle is listed as a California Species of Special Concern. Western pond turtles use a variety of aquatic habitats, including lakes, natural ponds, rivers, oxbows, streams (perennial/ephemeral), marshes, vernal pools, freshwater and brackish estuaries, drainage ditches, reservoirs, mill ponds, ornamental park ponds, stock ponds, abandoned gravel pits, and sewage treatment plants (Buskirk 2002; NatureServe 2007). The southwestern pond turtle has been documented in the Project area at several locations along the Santa Clara River and in the Salt Creek tributary during various field surveys conducted between 1996 and 2006. Additional incidental observations of southwestern pond turtle in the RMDP area have been made by Impact Sciences (2002) and Compliance Biology (2004D).

Two-Striped Garter Snake (*Thamnophis hammondii*). The two-striped garter snake is a California Species of Special Concern. Two-striped garter snakes are found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) AMSL (Stebbins 2003; Zeiner *et al.* 1988). This species was observed in the reach of the Santa Clara River within and adjacent to the Specific Plan area (Aquatic Consulting Services, Inc. 2002C; Impact Sciences, Inc. 2002; Compliance Biology, Inc. 2004; ENTRIX 2006B).

Arroyo Toad (*Bufo californicus*). The arroyo toad is listed as a California Species of Special Concern and is federally endangered. The species utilizes aquatic, riparian, and upland habitats to different degrees depending on the individual's stage of development and the season. No adult or subadult arroyo toads have been

observed in the Project area. However, arroyo toad tadpoles were observed in the Specific Plan area during surveys conducted in 2000 (Aquatic Consulting Services, Inc. 2002A–D). Specifically, during the surveys conducted by Aquatic Consulting Services, arroyo toad tadpoles were observed in the Santa Clara River upstream and downstream of the proposed Commerce Center Drive Bridge site and near the Valencia Water Treatment Plant.

Western Spadefoot Toad (*Spea hammondii*). The western spadefoot toad is a listed California Species of Special Concern. The species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). In total, there have been four separate documented occurrences of the western spadefoot toad in the Project area based on the focused surveys and incidental observations. Two occurrences of tadpoles are known from the Mission Village development area (Compliance Biology, Inc. 2006C). A western spadefoot toad was also observed within an isolated pool along the Santa Clara River upstream of the Commerce Center Bridge (Aquatic Consulting Services 2002A). Western spadefoot toads were observed in the Potrero Village development area within a rain pool in winter 2005; this location is believed to be extant (Dave Crawford, Compliance Biology, pers. comm., 2007). As western spadefoot toads have been observed in various locations in the Project area, and because suitable conditions for the species are expected elsewhere in unsurveyed portions of the Project area, there is a high potential for this species to occur in additional areas that contain seasonal pools.

Mammals

Low Mobility

San Diego Desert Woodrat (*Neotoma lepida*). The San Diego desert woodrat is listed as a California Species of Special Concern. Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth (Bleich 1973; Bleich and Schwartz 1975; Brown *et al.* 1972; Cameron and Rainey 1972; Thompson 1982). The mammal assessment conducted by Impact Sciences (2005) found that the San Diego desert woodrat is a relatively common rodent within the Specific Plan area of the RMDP site. Dudek observed a single midden in the High Country SMA (Dudek 2006B). San Diego desert woodrat was observed in Long and Potrero Canyons in 2005 (Chris Huntley, personal communication, October 2006).

Moderate Mobility

American Badger (*Taxidea taxus*). The American badger is listed as a California Species of Special Concern (CSC). Badgers are generally associated with dry, open, treeless regions, prairies and grasslands, low-intensity agriculture (*e.g.*, pasture and dryland crops), drier open shrublands and forest, parklands, and cold desert areas (Long 1973; Zeiner *et al.* 1990B). The badger, although not common on site, has been documented through systematic surveys and anecdotal observations of badger dens and tracks in three locations in the Project area, including the Specific Plan area (Impact Sciences, Inc. 2005), Potrero Creek in the Specific Plan area (Behrends, personal observation, 2006), and High Country SMA (Dudek 2006B).

San Diego Black-Tailed Jackrabbit (*Lepus californicus*). The San Diego black-tailed jackrabbit is listed as a California Species of Special Concern. The black-tailed jackrabbit occupies many diverse habitats, but is primarily found in arid regions supporting shortgrass habitats. Systematic surveys of the Project area have not been conducted, but the San Diego black-tailed jackrabbit has been anecdotally observed on site (Impact Sciences, Inc. 2005). Based on the Impact Sciences (2005) report of the San Diego black-tailed jackrabbit in the Project area, it is assumed that the species potentially occurs in suitable habitat throughout the site.

High Mobility

American Black Bear (*Ursus americanus*). The American black bear is considered special status as a trust resource by CDFG for the purposes of this report. The black bear is found in dense, mature stands of a variety of forest types. It can utilize valley foothill riparian forests, wet meadows, and brushy stands of forests. The black bear was anecdotally observed within High Country SMA in 2005 (Dudek 2006B). The specific location was not recorded, but it is assumed that black bears utilize portions of the High Country SMA due to its connection to the Santa Susana Mountains to the south.

Mountain Lion (*Puma concolor*). The mountain lion is designated by CDFG as a Specially Protected Mammal, which affords it some protections: it is unlawful to take, injure, possess, transport, import, or sell any species that are considered Specially Protected Mammals (except with a depredation permit for mountain lion). The mountain lion is considered a special-status species for the purposes of this analysis. Mountain lions prefer habitats that provide cover, such as thickets of brush and timber in woodland vegetation communities (Zeiner *et al.* 1990B). They also utilize caves and other natural cavities for cover and breeding.

Mountain lions have been documented within and adjacent to the Project area during focused surveys in 2004 for mammals by Impact Sciences (2005). Specific locations for mountain lions in the Project area were not provided, but it is assumed that mountain lions could occur anywhere in the Project area where deer also occur.

Mule Deer (*Odocoileus hemionus*). The mule deer is considered a CDFG trust resource and is considered a special-status species for the purposes of this analysis, because take of the species requires a game permit. Mule deer have been documented within and adjacent to the Project area during focused surveys in 2004 for mammals by Impact Sciences (2005). Mule deer were also observed in the High Country SMA in 2005 (Dudek and Associates, Inc. 2006B).

Mollusk

Undescribed Snail (*Pyrgulopsis* sp. *nova*). The undescribed snail has no current status; however, in 2006, it was observed on the Project site within portions of the Middle Canyon Spring. In addition, the snail's habitat requirements are unknown and a comprehensive distribution survey has not yet been attempted. The species was first observed within Middle Canyon Spring by USFWS biologists in 2006. In 2007, Dudek biologists observed over 100 of the undescribed snails in Middle Canyon Spring as well as in the lower reach of the Middle Canyon drainage (Dudek 2007C).

VCC

Birds

Raptors

Cooper's Hawk (*Accipiter cooperii*). The Cooper's hawk is on CDFG Watch List. Cooper's hawks are found in areas with dense stands of live oak, riparian, or other forest communities near water (Zeiner *et al.* 1990A). The Cooper's hawk frequents landscapes where wooded areas occur in patches and groves and often uses patchy woodlands and edges with snags for perching (Beebe 1974). The Cooper's hawk has been regularly observed within riparian and oak woodland habitats over multiple years during bird surveys conducted from 1988 through 2006 along the Santa Clara River (Guthrie 1988–1990, 1991A–B, 1992, 1993A–B, 1994A–B, 1995A–B, 1996A–B, 1997A–B, 1998A–B, 1999A–C, 2000B–C, 2000E–F, 2001A–B, 2002A, 2002C, 2003A–B, 2004F, 2004H–I, 2005A–B, 2006A–C; Labinger and Greaves 1995, 1996, 1997A–B; Labinger and Greaves

1999A). This species is known to be a year-round resident within the Project area (Bloom Biological, Inc. 2007A).

Loggerhead Shrike (*Lanius ludovicianus*). The loggerhead shrike is a Bird of Conservation Concern and has been designated by CDFG as a California Species of Special Concern. The species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perching and butchering sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas and can sometimes be found in mowed roadsides, cemeteries, and golf courses. It has been observed within the VCC planning area (Guthrie 1995A, 2004B); however, no mapped locations were recorded**.**

Prairie Falcon (*Falco mexicanus*). North America's only endemic falcon, the prairie falcon is a Bird of Conservation Concern and is on CDFG Watch List. Additionally, the prairie falcon is a migratory bird protected under the Migratory Bird Treaty Act (16 U.S.C. § 703 *et seq.*) and the USFWS has identified it as a Bird of Conservation Concern (USFWS 2002B). Prairie falcons inhabit open habitats in North America, including arid plains and steppe habitats. In the western states they prefer chaparral, desert grasslands, and creosote bush habitats. Surveys conducted by Guthrie detected two individual prairie falcons foraging during various surveys. One prairie falcon was detected on July 2, 2001, near VCC along Castaic Creek between the confluence with the Santa Clara River and I-5 (Guthrie 2001A).

Turkey Vulture (*Cathartes aura*). The turkey vulture has no federal or state status, but it is being discussed, for purposes of this report, as a CDFG trust resource. Turkey vultures use a variety of habitats while foraging for both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, nonintensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner *et al.* 1990A). On site, this species has been observed over multiple years during bird surveys conducted from 1988 through 2007 along the by Guthrie (1991B, 2004B) and Dudek (2006D). However, there are no mapped locations for any of these observations.

White-Tailed Kite (*Elanus leucurus*). The white-tailed kite is a California Fully Protected species. The white-tailed kite is commonly associated with agriculture areas (Grinnell and Miller 1944). It also inhabits low-elevation grasslands, savannah-like habitats, open sage scrub, meadows, wetlands, and oak woodlands, particularly in areas with a dense population of voles (Waian and Stendell 1970).

On the Project site, white-tailed kite has been observed primarily along the Santa Clara River, where it nests in associated riparian woodlands and forages in adjacent grasslands, open sage scrub, and agricultural fields (Guthrie 2005C; Bloom Biological, Inc. 2007A). Guthrie noted a total of eight pairs nesting within the Santa Clara River corridor from The Old Road Bridge to the Castaic Creek confluence between the years of 1993 and 2005 and he observed a total of three pairs nesting within Castaic Creek between 1993 and 2005 (Guthrie 2005C). In the latest survey effort, at least 10 pairs were observed along the Santa Clara River within the Specific Plan and VCC areas and adjacent to the Project site in Castaic Junction and near the Ventura County line (Bloom Biological, Inc. 2007A).

Riparian

Black-Crowned Night-Heron (*Nycticorax nycticorax*). The black-crowned night heron is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. Its habitat requirements are varied, including all types of wetland areas, including fresh, brackish, and saltwater ecosystems and even man-made ditches, canals, reservoirs, and wet agricultural fields (IHRMP 2001G). On site, this species was observed early in the year and is thought to be a wintering or migratory species within VCC planning area (Guthrie 1988, 1992, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E). There are no mapped occurrences of these observations. No roosts or rookeries (nesting colonies) have been detected during the surveys within or adjacent to the Project site during any of the surveys that have been conducted over the years.

Least Bell's Vireo (*Vireo bellii pusillus*). The least Bell's vireo was state listed as endangered in 1980 and federally listed as endangered by the USFWS in 1986 (51 FR 16474). The USFWS made a final critical habitat designation for the least Bell's vireo in 1994 (59 FR 4845). Least Bell's vireos primarily occupy riverine riparian habitats that typically feature dense cover within one to two meters of the ground and a dense, stratified canopy. The least Bell's vireo inhabits low, dense riparian growth along water or along dry parts of intermittent streams and is typically associated with southern willow scrub, cottonwood forest, mulefat scrub, sycamore alluvial woodland, southern coast live oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities. The least Bell's vireo has been observed over multiple years within the VCC planning area (Guthrie 1994A, 1995A, 1996A, 2003A, 2006C).

Nuttall's Woodpecker (*Picoides nuttallii*). The Nuttall's woodpecker is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. The woodpecker is primarily found in oak woodlands, to a lesser extent in riparian woodlands, and rarely in conifer forests. Nuttall's woodpecker has been described as a species characteristic of, if not confined to, oak woodlands in California (Lowther 2000). It has been observed nearly every year along the Santa Clara River since surveys began in 1988. Bloom Biological recorded additional sightings along the Santa Clara River east of Castaic Creek in the VCC planning area (Bloom Biological, Inc. 2007).

Tricolored Blackbird (*Agelaius tricolor*). The tricolored blackbird is a California Species of Special Concern and a Bird of Conservation Concern with regard to its nesting colony status. It was petitioned for state and federal listing by the Center for Biological Diversity in 2004, but the USFWS made a decision not to warrant protection in December 2006. These birds prefer to breed in freshwater marshes with dense growths of emergent vegetation dominated by cattails or bulrushes, but have also established colonies in willows, blackberries, thistles, and nettles. This species has been observed on within the VCC planning area during focused bird surveys (Guthrie 1994A, Guthrie 1995A, and Guthrie 1996A, Guthrie 1999A, 2006C), and off site in Castaic Junction (Guthrie 1994A, 2000E, 2001A, 2006C; Dudek 2006E). No breeding colonies have been observed since 1994, despite annual surveys through 2007 as described above. Tricolored blackbird has not been observed to breed on site.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*). The western yellow-billed cuckoo is a candidate for listing under the federal ESA, is a CESA-listed endangered species, and is a Bird of Conservation Concern with regard to its nesting status. The eastern yellow-billed cuckoo prefers a diverse variety of habitats, including open woodland with clearings and low, dense, scrubby vegetation as well as abandoned farmland, overgrown fruit orchards, successional shrubland, dense thickets along streams and marshes, shade trees, and gardens (Hughes 1999). The habitat preference of the western yellow-billed cuckoo, in contrast, is much more restricted in both species composition and size of the patch of preferred habitat. The habitat of the western yellow-billed cuckoo primarily consists of large blocks of riparian habitat, particularly cottonwood–willow riparian woodlands (66 FR 38611–38626). The western yellow-billed cuckoo has occasionally been documented within the Santa Clara River corridor during focused bird surveys in the RMDP area, although the locations of these observations were not mapped. Single individuals (thought to be migrants) were observed along the Santa Clara River east of the Project site in 1997 and 1998

(Guthrie 1997A; Labinger *et al.* 1997B; Labinger and Greaves 1999A) and west of the Ventura county line in 1997 (Guthrie 1997B). However, none have been observed in the Project area since then.

Yellow Warbler (*Dendroica petechia brewsteri*). The yellow warbler has no federal or state sensitivity status but is designated as a California Species of Special Concern by CDFG. In general, the yellow warbler breeds most commonly in wet, deciduous thickets, especially those dominated by willows, and in disturbed and early successional habitats (Lowther *et al.* 1999). This species was observed in the VCC planning area (Guthrie 1988, 1989, 1991A, 1992, 1993A, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E, 2001A, 2002A, 2003A, 2004F, 2005A, 2006C); however, these observations were not mapped. Off site, one nest was mapped in 2000 (Guthrie 2000F) in the Castaic Junction area. With the exception of the nest mapped in 2000, this species was only mapped during the Bloom Biological surveys (Bloom Biological, Inc. 2007A). These mapped observations were located in Castaic Creek and Hasley Canyon.

Yellow-Breasted Chat (*Icteria virens*). The yellow-breasted chat is designated by CDFG as a California Species of Special Concern. This species is not federally listed as threatened or endangered, but has been listed as threatened, endangered, or of special concern in some states and provinces on the periphery of its range (*e.g.*, Connecticut, New Jersey, New York, Ontario, and British Columbia) (Eckerle and Thompson 2001). In southern California, the yellow-breasted chat is primarily found in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. On site, recent observations were made in Castaic Creek in the VCC planning area in 2006 (specific locations not mapped), where chats were observed calling from territories in the riparian woodland (Guthrie 2006A, 2006C).

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*). The yellow-headed blackbird is designated by CDFG as a California Species of Special Concern. This species is not federally listed as threatened or endangered within any part of its range. It is found primarily within prairie wetlands, but it is also found commonly in wetlands associated with quaking aspen parks, mountain meadows, and arid regions. This species has been observed within the VCC planning area (Guthrie 1997A, 2006C). No nesting colonies have been observed within the Project site.

Upland Grassland

California Horned Lark (*Eremophila alpestris*). The California horned lark is on CDFG Watch List. California horned larks are common and abundant residents in a variety of open habitats, usually where trees and shrubs are absent. This species has been observed regularly foraging in plowed and graded fields near the Santa Clara River and Castaic Creek within the VCC planning area (Guthrie 1990, 1991B, 1992, 1996B, 1997B, 2000C, 2001A, 2002A, 2003A, 2004B, 2005A–B, 2006C; Dudek 2006D).

Upland Scrub and Chaparral

Allen's Hummingbird (*Selasphorus sasin*). The Allen's hummingbird is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range and according to Sauer *et al.* (1996) shows no statistically significant declines in population for the period from 1966 to 1996. The vegetation communities most commonly used by breeding Allen's hummingbirds are coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Allen's hummingbird has been documented numerous times within the VCC planning area. One individual was observed by Guthrie in late April in the VCC planning area (Guthrie 2004B). There are no mapped occurrences of these observations.

Chipping Sparrow (*Spizella passerina*). The chipping sparrow is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range and Sauer *et al.* (1997) have concluded that continental populations appear healthy. Chipping sparrows prefer open wooded habitats with a sparse or low herbaceous layer and few shrubs, if any (Zeiner *et al.* 1990A). On site, this species has been observed as a common migrant in the Project area, and one to 12 individuals were observed near edges of agricultural fields most days in early March (Bloom Biological, Inc. 2007A). The chipping sparrow has been observed over multiple years during bird surveys conducted from 1988 through 2007 along the Santa Clara River within riparian scrub and woodland habitat.

Coastal California Gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is a federally listed threatened species and a CDFG Species of Special Concern. It occurs in coastal southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. While isolated occurrences of California gnatcatchers occur off site to the east and southwest, no California gnatcatchers have been observed during the course of the focused surveys conducted for this species within the Specific Plan or Entrada

areas. However, during the course of surveys conducted within the VCC planning area, an individual California gnatcatcher was observed on October 5, 2007, by Dudek biologist Jeff Priest and biologist Ron Francis, a subconsultant to Dave Crawford, Compliance Biology, Inc. (Priest 2007A).

Costa's Hummingbird (*Calypte costae*). The Costa's hummingbird is designated by CDFG as a California Special Animal. It is not federally listed as threatened or endangered within any part of its range. It has a CNDDB ranking of global: demonstrably widespread, abundant, and secure; subnational: vulnerable to extirpation or extinction. Primary habitats are desert wash, edges of desert riparian and valley foothill riparian areas, coastal scrub, desert scrub, desert succulent scrub, lower-elevation chaparral, and palm oasis (Zeiner *et al.* 1990A). The species has been observed over multiple years during bird surveys conducted from 1988 through 2006 along the Santa Clara River within riparian scrub and woodland habitat; however, no mapped locations were recorded.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*). The southern California rufous-crowned sparrow is on CDFG Watch List. This species is not federally listed as threatened or endangered within any part of its range (Collins 1999B). The rufous-crowned sparrow occupies moderate to steep hillsides that are rocky, grassy, or covered by coastal sage scrub or chaparral. The southern California rufous-crowned sparrow has been observed over multiple years as a fairly common resident in the coastal scrub within the VCC planning area during annual bird surveys.

Upland Woodland

Lawrence's Goldfinch (*Carduelis lawrencei*). The Lawrence's goldfinch is designated by CDFG as a California Special Animal. Additionally, this species is recognized under the NatureServe system of Natural Heritage Programs as vulnerable at the state level within California and throughout its range and is listed as a Bird of Conservation Concern by the USFWS. Lawrence's goldfinches are found in cropland and hedgerows, shrubland and chaparral, and conifer, hardwood, and mixed woodlands (NatureServe 2007). Lawrence's goldfinch has been observed within the VCC planning area (Guthrie 1997A, 2000E, 2003A); however, no mapped locations were recorded.

Oak Titmouse (*Baeolophus inornatus*). The oak titmouse is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. Oak titmice inhabit a variety of habitat types, but are primarily associated with oaks, especially those in warm, dry habitats (Cicero 2000). The oak titmouse is common and abundant in

the Project area, nesting on site in cottonwood riparian and coast live oak communities. It has been observed over multiple years along the Santa Clara River and its tributaries and in the VCC planning area. Most observations of this species were not mapped.

Fish

Arroyo Chub (*Gila orcutti*). The arroyo chub is listed as a California Species of Special Concern, considered imperiled regionally and globally under the Natural Heritage Program methodology, and considered sensitive by the U.S. Forest Service. It occurs in slow-moving or backwater sections of warm to cool (10ºC to 24ºC) streams with mud or sand substrates (ENTRIX 2009). Arroyo chub species were observed within the within the VCC planning area (Haglund 1989).

Reptiles and Amphibians

Low Mobility

Coastal Western Whiptail (*Aspidoscelis tigris*). The coastal western whiptail is designated by CDFG as a California Special Animal. The coastal western whiptail is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. The species is also found in woodland and streamside growth and avoids dense grassland and thick shrub growth. While coastal western whiptails were not trapped or otherwise observed during pitfall trap surveys, the subspecies was identified as having the potential to occur in the Project area (Impact Sciences, Inc. 2006A). Because of observations in the High Country SMA and nearby locations (Compliance Biology, Inc. 2006; Dudek and Associates, Inc. 2006B), the presence of suitable habitat, observance that the Project area is within the range of the subspecies as described by Stebbins (2003), and the fact that the entire Project area was not surveyed by Impact Sciences (2006A) at a level of detail necessary to determine presence or absence of a particular reptile species, the coastal western whiptail is assumed to be present in the Project area.

Semi-Aquatic

Two-Striped Garter Snake (*Thamnophis hammondii*). The two-striped garter snake is a California Species of Special Concern. Two-striped garter snakes are found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) AMSL (Stebbins 2003; Zeiner *et al.* 1988). This species was observed within the VCC planning area (Ecological Sciences, Inc. 2003A).

Western Spadefoot Toad (*Spea hammondii*). The western spadefoot toad is a listed California Species of Special Concern. The species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). Western spadefoot toads were observed in the VCC planning area in a location that has since been developed (Dave Crawford, Compliance Biology, pers. comm., 2007; Compliance Biology, Inc. 2004G). As western spadefoot toads have been observed in various locations in the Project area, and because suitable conditions for the species are expected elsewhere in unsurveyed portions of the Project area, there is a high potential for this species to occur in additional areas that contain seasonal pools.

Entrada

Birds

Raptors

Cooper's Hawk (*Accipiter cooperii*). The Cooper's hawk is on CDFG Watch List. Cooper's hawks are found in areas with dense stands of live oak, riparian, or other forest habitats near water (Zeiner *et al.* 1990A). The Cooper's hawk frequents landscapes where wooded areas occur in patches and groves and often uses patchy woodlands and edges with snags for perching (Beebe 1974). This species has been regularly observed foraging within the Entrada planning area adjacent to the Santa Clara River during annual bird surveys (Guthrie 1988–1990, 1991A–B, 1992, 1993A–B, 1994A–B, 1995A–B, 1996A–B, 1997A–B, 1998A–B, 1999A–C, 2000B–C, 2000E–F, 2001A–B, 2002A, 2002C, 2003A–B, 2004F, 2004H–I, 2005A–B, 2006A–C; Labinger and Greaves 1995, 1996, 1997A–B; Labinger and Greaves 1999A).

Golden Eagle (*Aquila chrysaetos*). The golden eagle is on CDFG Watch List and a Fully Protected species. The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner *et al.* 1990A). On site, this species has occasionally been observed during annual bird surveys conducted from 1988 through 2007 along the Santa Clara River. A golden eagle was observed flying over the Santa Clara River in the vicinity of the Six Flags Magic Mountain Amusement Park within the Entrada planning area (Guthrie 1993A, 1993B).

Loggerhead Shrike (*Lanius ludovicianus*). The loggerhead shrike is a Bird of Conservation Concern and has been designated by CDFG as a California Species of Special Concern. The species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perching and butchering sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas and can sometimes be found in mowed roadsides, cemeteries, and golf courses. The loggerhead shrike is a breeding resident on site (Bloom Biological, Inc. 2007A). It has been observed within the Entrada planning area (Guthrie 2000D, 2004G; Dudek 2006E); however, there are no mapped occurrences for these observations.

Turkey Vulture (*Cathartes aura*). The turkey vulture has no federal or state status, but it is being discussed, for purposes of this report, as a CDFG trust resource. Turkey vultures use a variety of habitats while foraging for both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, nonintensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner *et al.* 1990A). On site, this species has been observed by Guthrie (2000D, 2004G) and Dudek (2006E); however, there are no mapped locations for any of these observations.

White-Tailed Kite (*Elanus leucurus*). The white-tailed kite is a California Fully Protected species. The white-tailed kite is commonly associated with agriculture areas (Grinnell and Miller 1944). It also inhabits low-elevation grasslands, savannah-like habitats, open sage scrub, meadows, wetlands, and oak woodlands, particularly in areas with a dense population of voles (Waian and Stendell 1970). A single white-tailed kite was observed hunting within the Entrada planning area in 2004 (Guthrie 2004G).

Riparian

Black-Crowned Night-Heron (*Nycticorax nycticorax*). The black-crowned night-heron is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. Its habitat requirements are varied, including all types of wetland areas, including fresh, brackish, and saltwater ecosystems and even man-made ditches, canals, reservoirs, and wet agricultural fields (IHRMP 2001G). On site, this species was observed early in the year and is thought to be a wintering or migratory species within the Project site. Observations of the species were mapped along the Santa Clara River in the Entrada planning area near the water reclamation plant west of

Old Road (Bloom Biological, Inc. 2007A). No roosts or rookeries (nesting colonies) have been detected during the surveys within or adjacent to the Project site during any of the surveys that have been conducted over the years.

Nuttall's Woodpecker (*Picoides nuttallii*). The Nuttall's woodpecker is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. The Nuttall's woodpecker is primarily found in oak woodlands, to a lesser extent in riparian woodlands, and rarely in conifer forests. Nuttall's woodpecker has been described as a species characteristic of, if not confined to, oak woodlands in California (Lowther 2000). It has been observed in the Entrada planning area; however, no mapped locations were recorded.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*). The western yellow-billed cuckoo is a candidate for listing under the federal ESA, is a CESA-listed endangered species, and is a Bird of Conservation Concern with regard to its nesting status. The eastern yellow-billed cuckoo prefers a diverse variety of habitats, including open woodland with clearings and low, dense, scrubby vegetation as well as abandoned farmland, overgrown fruit orchards, successional shrubland, dense thickets along streams and marshes, shade trees, and gardens (Hughes 1999). The habitat preference of the western yellow-billed cuckoo, in contrast, is much more restricted in both species composition and size of the patch of preferred habitat. The habitat of the western yellow-billed cuckoo primarily consists of large blocks of riparian habitat, particularly cottonwood–willow riparian woodlands (66 FR 38611–38626). The western yellow-billed cuckoo has occasionally been documented within the Santa Clara River corridor during focused bird surveys in the Entrada planning area, although the locations of these observations were not mapped. However, none have been observed in the Project area since then.

Yellow Warbler (*Dendroica petechia brewsteri*). The yellow warbler has no federal or state sensitivity status but is designated as a California Species of Special Concern by CDFG. In general, the yellow warbler breeds most commonly in wet, deciduous thickets, especially those dominated by willows, and in disturbed and early successional habitats (Lowther *et al.* 1999). A single migrant was observed in the Entrada planning area in 2000 (Guthrie 2000D).

Upland Grassland

California Horned Lark (*Eremophila alpestris*). The California horned lark is on CDFG Watch List. Horned larks are common and abundant residents in a variety of open habitats, usually where trees and shrubs are absent. Horned larks

have been observed regularly foraging in plowed and graded fields adjacent to the Entrada planning area in Castaic Junction (Guthrie 1991B, 1993A, 1994A–B, 1995B, 2000F, 2003A, 2004, 2005A).

Upland Scrub and Chaparral

Allen's Hummingbird (*Selasphorus sasin*). The Allen's hummingbird is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range and according to Sauer *et al.* (1996) shows no statistically significant declines in population for the period from 1966 to 1996. The vegetation communities most commonly used by breeding Allen's hummingbirds are coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Allen's hummingbird has been documented numerous times within the Entrada planning area. Six observations were made in the Entrada planning area in mid- to late June in 2004 (Guthrie 2004C).

Costa's Hummingbird (*Calypte costae*). The Costa's hummingbird is designated by CDFG as a California Special Animal. It is not federally listed as threatened or endangered within any part of its range, and has a CNDDB ranking of global: demonstrably widespread, abundant, and secure; subnational: vulnerable to extirpation or extinction. Primary habitats are desert wash, edges of desert riparian and valley foothill riparian areas, coastal scrub, desert scrub, desert succulent scrub, lower-elevation chaparral, and palm oasis (Zeiner *et al.* 1990A). The species has been observed over multiple years during bird surveys conducted from 1988 through 2006 along the Santa Clara River within riparian scrub and woodland habitat; however, there are no mapped locations for observations.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*). The southern California rufous-crowned sparrow is on CDFG Watch List. This species is not federally listed as threatened or endangered within any part of its range (Collins 1999B). The rufous-crowned sparrow occupies moderate to steep hillsides that are rocky, grassy, or covered by coastal sage scrub or chaparral. The southern California rufous-crowned sparrow has been observed over multiple years as a fairly common resident in the coastal scrub within the Entrada planning area during annual bird surveys. There are no mapped occurrences of these observations.

Upland Woodland

Oak Titmouse (*Baeolophus inornatus*). The oak titmouse is designated by CDFG as a California Special Animal. This species is not federally listed as threatened or endangered within any part of its range. Oak titmice inhabit a

variety of habitat types, but are primarily associated with oaks, especially those in warm, dry habitats (Cicero 2000). The oak titmouse is common and abundant in the Project area, nesting on site in cottonwood riparian and coast live oak communities. It has been observed over multiple years along the Santa Clara River and its tributaries and in the Entrada planning area. Most observations of this species were not mapped.

Bats

Western Red Bat (*Lasiurus blossevillii*). The western red bat is a listed California Species of Special Concern. There is little ecological information specifically for the western red bat; most studies are based on the red bat before it was separated into the western and eastern species. Red bats (*Lasiurus* spp.) typically roost in trees, occasionally in shrubs, and even on the ground (Shump and Shump 1982). Of the 135 total detections of bats in 2004 (Impact Sciences, Inc. 2005), there were only two detections of the western red bat.

Yuma Myotis (*Myotis yumanensis*). The Yuma myotis is a listed California Special Animal. Forests and woodlands are primary habitats and foraging usually occurs within open, uncluttered habitats and low over water sources, such as ponds, streams, and stock ponds (Brigham *et al.* 1992; Zeiner *et al.* 1990B). The presence of the Yuma myotis was confirmed in the Project area through capture at The Old Road and I-5 survey site in 2006.

Insects (Butterflies)

Monarch Butterfly (*Danaus plexippus*). The monarch butterfly has been designated by CDFG as a California Special Animal. The species' distribution is controlled by the distribution of its larval host plant (*i.e.*, various milkweeds, genus *Asclepias*). Individual monarch butterflies were observed during surveys conducted in April and May of 2004 and 2005 as well as during various other wildlife and plant surveys that have been conducted. However, no wintering sites have been observed, and, due to the site's distance from the coast, it is unlikely that the Project area would be used by large numbers of overwintering adults (Compliance Biology, Inc. 2004A).

Fish

Arroyo Chub (*Gila orcutti*). The arroyo chub is listed as a California Species of Special Concern, is considered imperiled regionally and globally under the Natural Heritage Program methodology, and is considered sensitive by the USFS. It occurs in slow-moving or backwater sections of warm to cool (10ºC to 24ºC)

streams with mud or sand substrates (ENTRIX 2009). Arroyo chub species have been observed within the Entrada planning area (Aquatic Consulting Services, Inc. 2002D; Haglund and Baskin 1995, 2000).

Reptiles and Amphibians

Semi-aquatic

Two-Striped Garter Snake (*Thamnophis hammondii*). The two-striped garter snake is a California Species of Special Concern. Two-striped garter snakes are found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) AMSL (Stebbins 2003; Zeiner *et al.* 1988). This species has been observed within the Entrada planning area (Impact Sciences, Inc. 2001).

Southwestern Pond Turtle (*Actinemys marmorata pallida*). The southwestern pond turtle is listed as a California Species of Special Concern. Western pond turtles use a variety of aquatic habitats, including lakes, natural ponds, rivers, oxbows, streams (perennial/ephemeral), marshes, vernal pools, freshwater and brackish estuaries, drainage ditches, reservoirs, mill ponds, ornamental park ponds, stock ponds, abandoned gravel pits, and sewage treatment plants (Buskirk 2002; NatureServe 2007). The southwestern pond turtle has been documented in the Project area at several locations along the Santa Clara River and in the Salt Creek tributary during various field surveys conducted between 1996 and 2006. There were additional incidental observations of southwestern pond turtle within the Santa Clara River in the Entrada planning area by Impact Sciences (2001), Ecological Sciences (2004A), and Dudek (Dudek and Associates, Inc. 2006E).

Mammals

Low Mobility

San Diego Desert Woodrat (*Neotoma lepida*). The San Diego desert woodrat is listed as a California Species of Special Concern. Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth (Bleich 1973; Bleich and Schwartz 1975; Brown *et al.* 1972; Cameron and Rainey 1972; Thompson 1982). The mammal assessment conducted by Impact Sciences (2005) found that the San Diego desert woodrat is a relatively common rodent within the Specific Plan area of the RMDP site. Dudek observed a single midden in Entrada (Dudek 2006G). San Diego desert woodrat was observed in Long and Potrero Canyons in 2005 (Chris Huntley, personal communication, October 2006).

High Mobility

Mule Deer (*Odocoileus hemionus*). The mule deer is considered a CDFG Trust Resource and is considered a special-status species for the purposes of this analysis, because take of the species requires a game permit. Mule deer were observed in the Entrada planning area in 2000 and 2006 (Haglund and Baskin 2000; Dudek 2006E).

Special-Status Wildlife Species Not Observed within the Project Area

Birds

Raptors

Short-Eared Owl (*Asio flammeus*). The short-eared owl is a federally listed Bird of Conservation Concern as well as a CDFG-designated California Species of Special Concern. The short-eared owl is a resident of mixed and tall grass habitats. The species is usually found in open areas with few trees, such as annual and perennial grasslands, prairies, tundra, dunes, meadows, agricultural lands, and saline and fresh emergent wetlands (Zeiner *et al.* 1990A; Terres 1980). Short-eared owls have never been documented in the Project area. However, an individual was observed just outside the Project boundary in the Salt Creek area just west of the Ventura/Los Angeles County line in the fall of 2005 (Dudek 2006B).

Riparian

Willow Flycatcher (*Empidonax traillii*)/Southwestern Willow Flycatcher (*E. t. extimus*). The full species of willow flycatcher, including the southwestern willow flycatcher, little willow flycatcher (*E. t. brewsteri*), and *E. t. adastus* (no common name other than willow flycatcher) subspecies, was listed as state endangered by CDFG in 1991. The subspecies southwestern willow flycatcher was listed as federally endangered species by the USFWS in 1995. The willow flycatcher has been detected almost every year within the River corridor in the Project area during the focused bird surveys. However, because all observations were early in the breeding season and no observations occurred after June 22, indicating nesting on site, all individuals are assumed to have been migrants and were probably either the little willow flycatcher or *E. t. adastus*. No southwestern willow flycatchers have been observed to nest on site. Along the Santa Clara River in the RMDP, willow flycatchers were observed by Guthrie (1993B, 1997B, 1998A, 1999B, 2000C, 2001B, 2002C, 2004H, 2005B), Labinger *et al.* (1995), and Bloom Biological, Inc. (2007A); along Castaic Creek in VCC by Guthrie

(1988, 1990, 2000E, 2001A, 2002A, 2003A, 2004F, 2005A); and adjacent to Entrada in the Castaic Junction area by Guthrie (1990, 1997A, 1999A, 2000E, 2002A, 2003A, 2006C) and Dudek (2006E). No southwestern willow flycatchers exhibiting nesting, paired, or territorial behavior have been observed in the Project site or vicinity. The most recent observation of the southwestern willow flycatcher displaying territorial behavior is downstream approximately 18 miles, near Saticoy (Labinger and Greaves 1999A). The CNDDB (CDFG 2007A) lists one occurrence of nesting southwestern willow flycatchers in the Santa Clara River corridor upstream of the Project area, along Soledad Canyon Road near Agua Dulce, in 1997.

Summer Tanager (*Piranga rubra*). The summer tanager is not state or federally endangered, but is designated by CDFG as a California Species of Special Concern. Western populations of summer tanagers occupy riparian woodlands dominated by willows and cottonwoods (*Populus* spp.) at lower elevations (Robinson 1996; Rosenberg *et al.* 1982, 1991); and at higher elevations they utilize mesquite (*Prosopis* spp.) and salt cedar (*Tamarix* spp.) habitats (Robinson 1996). No individuals have been observed within the Project site during annual bird surveys. One individual was observed off site west of the Ventura County line in 1993 and 1994 (Guthrie 1993B, 1994B); within Castaic Junction in 1991 (Guthrie 1991A); in April, May, and July 1993 in dense cottonwoods downstream of the Valencia Wastewater Plant (Castaic Junction area) (Guthrie 1993A); and it has also been observed east of the project site in 2000 and 2003 (Guthrie 2000E, 2003A). These observations were not mapped.

Upland Grassland

Grasshopper Sparrow (*Ammodramus savannarum*). The grasshopper sparrow has been designated by CDFG as a California Species of Special Concern. The species frequents dense, dry or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting. Grasshopper sparrows require fairly continuous native grassland areas with occasional taller grasses, forbs, or shrubs for song perches (Garrett and Dunn 1981). No observations of the grasshopper sparrow have been made within the Project area, but potential habitat exists on site.

Upland Scrub and Chaparral

Bell's Sage Sparrow (*Amphispiza belli belli*). The Bell's sage sparrow is not state or federally endangered, but is on CDFG Watch List and is a USFWS Bird of Conservation Concern. The Bell's sage sparrow occupies semi-open habitats with evenly spaced shrubs that are one to two meters (3.3 to 6.6 feet) high

(IHRMP 2001A). At higher elevations in southern California, Bell's sage sparrow often occurs in big sagebrush (*Artemisia tridentata*) (IHRMP 2001A). Bell's sage sparrow has never been detected within the Project area or region. However, two individuals were observed in April 2004 during a focused bird survey in the Legacy Project site (Guthrie 2004C). This site is adjacent to the Specific Plan site, just south of Mission Village and east of Potrero Village.

Black-Chinned Sparrow (*Spizella atrogularis*). The black-chinned sparrow is designated by CDFG as a California Special Animal and is a USFWS Bird of Conservation Concern. This species is not federally listed as threatened or endangered within any part of its range. The black-chinned sparrow occupies arid brushlands and chaparral, although it occurs less commonly within coastal sage scrub (Unitt 2004; Garrett and Dunn 1981). The species may use open chaparral (Garrett and Dunn 1981) but usually favors moderately dense but not overgrown chaparral of mixed species and shows in lowest numbers in thick old chaparral on north-facing slopes (Tenney 1997; Unitt 2004). The black-chinned sparrow was not detected within the Project area or region. The species has not been detected in the area for over a dozen years; it is not believed to occur within the Project area.

Bats

Long-Legged Myotis (*Myotis volans*). The long-legged myotis has been designated by CDFG as a California Special Animal. The long-legged myotis is a year-long resident of California and primarily occurs in coniferous forests, but it also uses riparian and oak woodland habitats for roosting and foraging (Warner and Czaplewski 1984; Wilson and Ruff 1999; Zeiner *et al.* 1990B). The presence of the long-legged myotis was not confirmed in the Project area during the acoustic and mist netting surveys conducted in 2004 and 2006 (Impact Sciences, Inc. 2005, Johnson 2006). However, bats with acoustic signatures in the 40 kHz range, which is the range for the long-legged myotis, were detected on site in 2004 and 2006.

Western Small-Footed Myotis (*Myotis ciliolabrum*). The western small-footed myotis is designated by CDFG as a California Special Animal. The western small-footed myotis occurs in a wide variety of arid upland habitats at elevations ranging from sea level to 2,700 meters (8,860 feet) AMSL (Zeiner *et al.* 1990B). Habitats used by this species include riparian areas, woodlands, and brushy uplands (Holloway and Barclay 2001; Zeiner *et al.* 1990B). The presence of the western small-footed myotis was not confirmed in the Project area during the

acoustic and mist netting surveys conducted in 2004 and 2006 (Impact Sciences, Inc. 2005, Johnson 2006).

Townsend's Big-Eared Bat (*Corynorhinus townsendii*). The Townsend's big-eared bat is a designated California Species of Special Concern. The Townsend's big-eared bat is primarily associated with mesic habitats characterized by coniferous and deciduous forests, although it also occurs in xeric areas (Kunz and Martin 1982). This species was not detected during the 2004 and 2006 surveys (Impact Sciences, Inc. 2005, Johnson 2006).

Fish

Southern Steelhead (*Oncorhynchus mykiss*). The southern steelhead is listed as federally endangered and is listed as a California Species of Special Concern. Within the Santa Clara River drainage, southern steelhead historically inhabited Piru Creek, Sespe Creek, Santa Paula Creek, Hopper Creek, and possibly Pole Creek (Titus *et al.* n.d.). Presently, southern steelhead occur downstream of the proposed Project in the Santa Clara River watershed in Piru Creek, between the confluence with the Santa Clara River and Santa Felicia Dam, in Sespe Creek, in Santa Paula Creek, and possibly in Hopper Creek and Pole Creek (Stoeker and Kelly 2005). Habitat for juveniles and spawning adults is described as relatively cool freshwater streams, well-oxygenated water with adequate depth and cover in the way of gravel, cobble, boulder, undercut banks, large and small woody debris, and overhanging vegetation. As non-spawning adults, southern steelhead are found in the Pacific Ocean (McEwan and Jackson 1996; Moyle 2002). Reconnaissance surveys conducted along the Santa Clara River and tributary drainages within the Specific Plan area of the RMDP were negative in 2004 and 2005 (ENTRIX 2009).

Reptiles and Amphibians

Low Mobility

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*). The coast patch-nosed snake is listed as a California Species of Special Concern. It occupies desert scrub, coastal chaparral, washes, sandy flats, and rocky areas. Coast patch-nosed snakes were not trapped or otherwise observed during surveys conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences, Inc. 2006A). The Project area is located towards the northern extent of the subspecies' range (Stebbins 2003), and based on the CNDDB, the coast patch-nosed snake has only been documented south of the Project area.

Rosy Boa (*Charina trivirgata*). The rosy boa is designated by CDFG as a California Special Animal. The rosy boa inhabits rocky shrubland and desert habitats and is attracted to oases and streams but does not require permanent water (Stebbins 2003). Rosy boas were not trapped or otherwise observed during surveys conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences, Inc. 2006A).

San Bernardino Ringneck Snake (*Diadophis punctatus*). The San Bernardino ringneck snake is designated by CDFG as a California Special Animal. The ringneck snake is found in moist habitats, including woodlands, hardwood and conifer forest, grassland, sage scrub, chaparral, croplands/hedgerows, and gardens (NatureServe 2007; Stebbins 2003). San Bernardino ringneck snakes were not trapped or otherwise observed during surveys conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences, Inc. 2006A).

Semi-Aquatic

California Red-Legged Frog (*Rana draytonii*). The California red-legged frog is a federally threatened species and is also designated by CDFG as a California Species of Special Concern. Breeding occurs in streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and stock ponds. California red-legged frogs can occur in ephemeral ponds or permanent streams and ponds; however, populations probably cannot persist in ephemeral streams (Jennings and Hayes 1985). The California red-legged frog has not been observed in the Project area. While there are no records of California red-legged frog from the Project site in the numerous wildlife surveys conducted since 1992, the species is known from the Project region. The San Marino Environmental Associates (1995) report states that Thomas Haglund observed red-legged frogs in the mid-1970s in the Santa Clara River at Fillmore and that "this may represent the last sighting of this species in the Santa Clara River" (p. 37).

Aquatic

South Coast Garter Snake (*Thamnophis sirtalis*). The south coast garter snake is designated by CDFG as a California Species of Special Concern. They are restricted to marshlands, meadows, and upland habitats near permanent water with adjoining riparian vegetation (Jennings and Hays 1994). No focused surveys have been conducted for this species, and no observations have been noted in previous wildlife surveys for other riparian and aquatic species (SMEA 1995; Aquatic Consulting Services, Inc. 2002A, 2002B, 2002C, 2002D; Impact Sciences, Inc. 2002; Compliance Biology, Inc. 2004D; Impact Sciences, Inc.

2001; Ecological Sciences, Inc. 2004A). Natural history records for the south coast garter snake in California include sightings from Santa Clara River Valley (Ventura County), south to San Pasqual (San Diego County) (NatureServe 2007).

Mammals

Low Mobility

Southern Grasshopper Mouse (*Onychomys torridus*). The southern grasshopper mouse is designated by CDFG as a California Species of Special Concern. The southern grasshopper mouse is found rangewide in low arid scrub and semi-scrub vegetation (Frank and Heske 1992; McCarty 1975), and the subspecies *O. t. ramona* (which is the subspecies designated as a California Species of Special Concern) occurs in grasslands and sparse coastal scrub habitats. The mammal assessment conducted by Impact Sciences (2005) did not document the southern grasshopper mouse in the Project area. The species also was not captured in pitfall trapping studies in 2004 and 2006 that were conducted primarily to inventory the reptiles and amphibians in the Project area (Impact Sciences, Inc. 2006).

Moderate Mobility

Ringtail Cat (*Bassariscus astutus*). The ringtail cat (ringtail) is a California Fully Protected species. Suitable habitat for ringtails consists of broken semi-arid country with a mixture of hardwood forest and shrubland in close association with rocky areas or riparian habitats (Poglayen-Neuwall and Toweill 1988; Zeiner *et al.* 1990B). Although no ringtails were documented during the mammal survey, Impact Sciences (2005) concluded that the species has a moderate potential to occur on site in dense woodland or riparian areas. However, in addition to the negative Impact Sciences (2005) study findings, this species has never been observed in the numerous wildlife surveys conducted in the Specific Plan area, including recent wildlife surveys conducted by Dudek (2006A, 2006B, 2006C, 2006D).

4.5.3.4.7 Wildlife Habitat Connectivity and Buffers

The existing setting of the Project area includes large areas of natural undeveloped land and active land uses, including oil and natural gas production, cattle grazing, and agricultural operations that have been in operation for decades and are currently ongoing (see **Subsection 4.5.3.3.1** and **Figure 4.5-10**, RMDP/SCP – Ongoing Agricultural, Grazing Practices, and Oil Leases under No Action/No Project Alternative). SR-126 passes through the north-central portion of the Specific Plan area along the Santa Clara River. The River corridor also contains substantial areas of agriculture. Native and naturalized vegetation communities present are representative of those found in the region and include high-quality examples of the vegetation communities found in the ecosystems of the Santa Susana Mountains and the Santa Clara River. Upland vegetation communities dominate the landscape within the Specific Plan site, both north and south of the Santa Clara River. The dominant upland vegetation communities include coastal scrub (and associations and alliances), chaparral and associations, coast live oak woodland, mixed oak woodland valley oak/grass, and California annual grasslands. The Santa Clara River supports a variety of riparian vegetation communities, including southern cottonwood–willow riparian forest, southern willow scrub, mulefat scrub, arrow weed scrub, alluvial scrub, herbaceous wetlands, coastal and valley freshwater marsh, cismontane alkali marsh, and river wash. Intermittent and ephemeral drainages on site include cismontane alkali marsh, river wash, mulefat scrub, scalebroom scrub, big sagebrush scrub, and alluvial scrubs.

Although oil and natural gas production, cattle grazing, and agricultural operations have had an impact on overall wildlife habitat quality and likely affect the distribution of wildlife in the Project area, current wildlife use of the area probably is relatively unconstrained, compared to a post-build-out scenario. The discussion of wildlife corridors and buffers in the following subsections therefore focuses on the existing characteristics of the Project area that will be important for analyzing the impacts of the proposed Project to habitat connectivity and wildlife buffers.

For a literature review regarding wildlife habitat buffers see the Newhall Ranch Resource Management and Development Plan: Wildlife Habitat Buffers and Connectivity White Paper (Dudek 2008C) in **Appendix 4.5**.

4.5.3.4.7.1 *Wildlife Habitat Connectivity*

A fundamental concept and central tenet of conservation biology theory is that a lack of habitat connectivity and contiguity (usually referred to as habitat fragmentation and isolation) may cause extinction of local populations as a result of two processes: (1) reduction in total habitat area, which reduces effective population sizes; and (2) insularization of local populations, which affects dispersal and immigration rates (Wilcox and Murphy 1985; Wilcove *et al.* 1986). Wilcox and Murphy (1985) further point out that immigration may be impeded by conversion of natural

vegetation communities that provide habitat between occupied or potential habitat patches, thus increasing the probability of extinction. This latter point is the crux of the habitat linkage problem. That is, isolation of habitat patches accompanied by intervening inhospitable land cover (*e.g.*, urban development, roadways) is thought to increase the probability of permanent extinction of local populations. Because of complex community-level interactions (*e.g.*, mutualistic species, habitat guilds, keystone species), the loss of one or a few species from a habitat patch as a direct result of habitat fragmentation (primary extinctions) also may result in multiple "secondary" extinctions within the habitat patch (Wilcox and Murphy 1985).

Habitat fragmentation has been linked with reduced diversity in bird species, even on adjacent nonfragmented habitats (Rottenborn 1999). Several studies in coastal San Diego County have demonstrated species losses related to habitat fragmentation and isolation. Soulé *et al.* (1988) found very high rates of extinction in a study of the distribution of "chaparral-dependent" native birds (the analysis included coastal sage scrub species) in isolated canyon habitat fragments. Soulé *et al.* (1988) attributed this loss to the focal species' generally low vagility and inability to traverse urban environments. Similarly, Soulé *et al.* (1992) found that fragmentation caused rapid extinctions with predictable sequences of species loss in a suite of species including plants, birds, and rodents in coastal sage scrub habitat and Bolger, Alberts *et al.* (1997) found fewer rodent species in fragments isolated for longer periods of time and at greater isolation distances in coastal San Diego County. Lower arthropod diversity was also observed by Bolger *et al.* (2000) in older and smaller habitat fragments in the same region.

Wildlife connections also likely play a critical role in sustaining "metapopulations," which are characterized as local populations of the same species that are partially isolated but connected by pathways for dispersal (immigration/emigration) (Levins 1969). Local populations within a metapopulation are subject to stochastic events, and they fluctuate depending on the rate of dispersal between the local populations and the local rate of extinction. Patches subject to local extirpations may be recolonized by dispersal from other source patches, provided that habitat connectivity remains for the species. Truly or functionally isolated local populations risk permanent extinction by a variety of causes, including simple population dynamics, loss of genetic integrity, or stochastic environmental impacts.

Natural environments are typically heterogeneous and form a mosaic across a landscape. Plant community distributions, in particular, follow distinct patterns based on abiotic conditions (*e.g.*, soil, slope aspect, elevation) and biotic conditions (*e.g.*, competition, soil microbial ecology, parasitism). Terrestrial wildlife species typically occupy favorable patches within a landscape matrix and may move between patches through less favorable habitats. However, terrestrial wildlife species are more likely to follow pathways between habitat patches that contain elements of their preferred habitat (Rosenberg *et al.* 1997). Disjunct habitat patches that are used by terrestrial wildlife to negotiate through landscape mosaics have been likened to "stepping-stones," and some researchers (*e.g.*, Bennet 2003) have suggested that, in some cases

and for some species, stepping-stone habitat is as effective as continuous corridors are. However, such stepping-stone patches must be traversable and must not be behaviorally limiting to the species. Behavior has been shown to be a primary condition that determines the propensity of a particular species to utilize a habitat linkage or corridor. Such limitations include movement behavior, environmental cues (*e.g.*, olfactory cues), perceived risk of predation, susceptibility to disturbance, and human activity (*e.g.*, Aars and Ims 1999; Brinkerhoff *et al.* 2005; Fernandez-Juricic *et al.* 2005). For example, individuals may traverse relatively long distances across generally unsuitable but natural habitat, but behaviorally will avoid crossing paved and unpaved roads (see Trombulak and Frissell 2000 for a review of the ecological effects of roads). Therefore, for a habitat linkage or corridor to function properly, it must not pose physical or behavioral obstacles to the movement behavior of a particular species. Additionally, the rate of animal movement through a landscape matrix may depend on the quality of habitat for that species (Rosenberg *et al.* 1997). Terrestrial wildlife tend to move more slowly through areas with higher-quality habitat components than through those areas with lower-quality habitat components. Risk of predation, disturbance, and human activity are also limiting factors for species movement and dispersal.

There is a distinction between short-term individual movements (such as foraging within an organism's home range), long-term dispersal (one-time emigration and immigration events between populations), and migration (seasonal or periodic movements). Corridors and habitat linkages may allow for both long- or short-term movements, dispersal, and migration, depending on the life history requirements and the ability of a particular species to travel through a landscape (also called its vagility). The habitat requirements that allow for dispersal and migration likely are similar, the difference being that dispersal is usually a one-way movement related to emigration/immigration, and migration is a seasonal or periodic movement (Lincoln *et al.* 1998).

For the purpose of this discussion, two kinds of dispersal are defined, based on Pielou (1979): diffusion and jump dispersal. Diffusion is the gradual movement or expansion of populations (as opposed to individuals) across a landscape over several generations and may be applicable to, for instance, nonmigratory small mammals or birds re-occupying recovering burned sites. Jump dispersal (hereafter simply called dispersal) is a one-time, long-distance movement within the lifetime of an organism across otherwise relatively unsuitable landscapes or across suitable habitat already occupied by conspecifics (members of the same species). An example of jump dispersal is a juvenile mountain lion dispersing across other individuals' home ranges or rural developed areas to establish a new home range.

These two types of movement—diffusion and dispersal—are discussed in the context of three main types of habitat connections—habitat linkages, wildlife corridors, and wildlife crossings—in the following subsections to provide a framework for later applications to the Project area. These habitat connections thus decrease in scale from regional or landscape-level connections

(habitat linkages) to linear pathways between areas (wildlife corridors), and down to constrained wildlife movement pathways within development (wildlife crossings).

Wildlife Landscape Habitat Linkages. Landscape habitat linkages (or simply linkages) are relatively large open space areas that contain natural habitat and provide connection between at least two larger adjacent open spaces that can provide for both diffusion and dispersal of many species. Linkages can form contiguous tracts of habitat when adjacent to other open space areas. Large open space networks can be formed in this way to connect and conserve habitat through entire regions (Bennett 2003).

Linkages can form large tracts of natural open space, serving both as "live-in" or "resident" habitat and as connections to the larger landscape (*e.g.*, large core habitat areas). Linkages are capable of sustaining certain communities of species in self-contained, functioning ecosystems, thus supporting both plant and animal populations and allowing for gene flow through diffusion of populations over a period of generations, as well as allowing for jump dispersal between neighboring habitats. Linkages may vary in their function depending on the species, serving more as landscape-scale dispersal corridors than habitat for larger or more vagile species, particularly those with large home ranges such as mountain lions. Linkages are, nonetheless, capable of supporting at least a portion of the populations of these larger or more vagile species. Linkages may also serve as migratory routes for ungulates, for example, and thus provide a more natural and sustainable landscape environment for large predators and their prey compared to wildlife corridors through which species are expected to move quickly.

As used here, linkages are defined as large, open space areas that are large enough to support at least a natural habitat mosaic and viable populations of smaller terrestrial species, such as rodents, smaller carnivores (raccoons, skunks, foxes, and weasels), passerine birds, amphibians, reptiles, and invertebrates.

Figure 4.5-22 shows the conceptual regional open space connectivity identified by Penrod *et al.* (2006) that would provide for landscape-scale habitat connectivity between the Santa Susana Mountains to the south and the Los Padres National Forest to the north. These conceptual linkages encompass the High Country SMA and the Salt Creek area within the Project area and the Santa Clara River west of the Project area. Penrod *et al.* (2006) considered the High Country SMA and Salt Creek area, along with regional open space conservation areas and initiatives such as "SOAR,"[1] in recommending a linkage

[1] Save Open-Space and Agricultural Resources (SOAR) is a non-profit organization which seeks to maintain agricultural, open space, and rural lands within Ventura County and surrounding regions. Development activities within the SOAR boundaries are limited by County Ordinance.

design that would connect the Santa Monica Mountains, San Gabriel Mountains, and the Sierra Madre Mountains. This linkage design was also based on a "least cost analysis" that quantitatively models the most efficient routes that target animals could take to travel between these open space areas. The least cost analysis incorporates available information for movement-limiting variables such as elevation, vegetation, topography, and road density. The least cost analysis also considered designated and existing open space, including National Forest and designated Newhall Ranch Specific Plan open space such as the High Country SMA. The "least cost path" is the most direct or optimum route utilizing suitable habitat and minimizing costs (*e.g.*, energy costs, risk of mortality), but it does not represent all potential routes available to a species that may be more costly, but feasible, alternatives. Dispersing animals are often young adults, and behaviorally these animals may take routes that do not ensure the least cost or the highest rate of survivability, or they may be inhibited from using such routes by adults. However, these least cost analyses quantitatively identify idealized linkages and corridors that would allow for the most efficient long-range dispersal and migration movement for wildlife between larger conservation areas.

The High Country SMA and Salt Creek area within the Project area comprise an important part of the least cost path linkage design identified by Penrod *et al.* (2006). They provide a key part of the east–west linkage that crosses I-5 and connects to the Angeles National Forest in the San Gabriel Mountains to the east and to Ventura County SOAR open space to the southwest. They also provide a significant part of the north–south linkage between the Santa Susana Mountains and the "Fillmore Greenbelt" to the northwest that further links to the Los Padres National Forest and the Angeles National Forest to the north.

Wildlife Corridors. Rosenberg *et al.* (1995) distinguish between habitat and wildlife corridors. Habitat provides for the life history components of survivorship, reproduction, and movement. Wildlife corridors are linear landscape elements that provide for species movement and dispersal between two or more habitats but do not necessarily contain sufficient habitat for all life history requirements of a species, particularly reproduction (Rosenberg *et al.* 1995, 1997). For this reason, while corridors may provide for dispersal of most species, they may not provide for diffusion of populations over a longer time scale. The main prerequisite for corridors is that they increase animal movement between habitat patches. The mechanisms related to the efficacy of corridors are varied and species-specific (Soulé and Gilpin 1991; Beier and Loe 1992; Rosenberg *et al.* 1995; Haddad and Tewksbury 2005A). Additionally, even if the corridor itself does not provide habitat functions, it is expected to at least maintain plant and animal populations, gene flow between the constituent subpopulations, and biodiversity (Haddad 1999). This ebb and flow of genetic diversity should occur if organisms are traversing corridors that physically connect geographically patchy populations (Beier and Loe 1992). Corridors

thus provide physical conduits for maintaining specific genetic diversity, species richness, and community integrity. However, corridors may also connect population sources to "sink habitat" that can result in the net reduction of a population; in other words, the sink habitat either does not support the full life history of the species, or populations are more vulnerable to risk factors.

As noted above, under existing conditions, wildlife have a relatively unconstrained landscape for habitat use and movement throughout the Project area. In a relatively undeveloped landscape, high and moderate mobility wildlife such as mule deer, mountain lion, American badger, black-tailed jackrabbit, and virtually all bird species can be expected to travel relatively freely throughout an area, because no significant obstacles to movement exist. However, even in an unconstrained landscape, there are likely favored areas for habitat use and movement related to existing conditions, such as vegetation cover, topography, and existing land uses. For example, mule deer prefer rugged terrain and slopes, and mountain lions prefer canyon bottoms and gently sloping terrain.

Potentially important wildlife corridors in the Project area include linear landscape elements that connect larger habitat patches. Potential corridors should allow high mobility ground-dwelling species (*e.g.*, mule deer, mountain lion, black bear) to move through areas in a single generation and should also contain sufficient habitat components for occupation by low and moderate mobility species. Less vagile species that are unable to move through a corridor in a lifetime require sufficient habitat to allow diffusion of the species over more than one generation (intergenerationally) through the area. High mobility aerial species were not considered in the identification of corridors because of their relative independence of wildlife corridors.

These potential wildlife corridors were identified primarily from scent/track station data collected in 2004 by Impact Sciences, Inc. (2005), topographic analysis, incidental field observations (Dudek and Associates 2006B), and professional judgments based on known habitat associations of wildlife species in the Project area. The Impact Sciences, Inc. (2005) scent/track stations were located throughout the Specific Plan area, including locations along Salt Creek Canyon from the eastern portion toward the Ventura County line, north above Potrero Mesa, throughout Long Canyon and around the agriculture field north of Long Canyon, south of Lion Canyon and Grapevine Mesa, dispersed throughout Exxon Canyon and Middle Canyon, and in a few portions of Chiquito Canyon, San Martinez Grande, and the Entrada planning area. Impact Sciences, Inc. (2005) also conducted nighttime spotlight surveys along roadways throughout the Project area for five nights a week between July 28 and September 30, 2004.

Thirteen potential wildlife corridors within the Project area were identified in this analysis (**Figure 4.5-31**):

1. Santa Clara River Corridor
2. Salt Creek Confluence
3. Salt Creek–High Country
4. East Fork Salt Creek
5. Potrero Canyon–Salt Creek
6. Potrero Canyon
7. Long Canyon
8. Short Canyons–River Corridor
    a. Humble Canyon
    b. Lion Canyon
    c. Exxon Canyon
    d. Dead End Canyon
    e. Middle Canyon
    f. Magic Mountain Canyon
9. Chiquito Canyon
10. San Martinez Grande Canyon
11. Off-Haul Canyon
12. Homestead Canyon
13. Castaic/Hasley Corridor

These corridors provide habitat connections among the larger open space areas—High Country SMA, Salt Creek area, and River Corridor SMA—and provide connections to habitat areas beyond the Project area, as discussed above in the context of the regional landscape-level habitat connections.

The Santa Clara River is a critical wildlife corridor in the Project area because it provides both significant habitat connectivity and resident habitat for many wildlife species. The River corridor connects downstream and upstream areas, including tributary drainages such as Salt Creek and Castaic Creek that allow wildlife access to uplands from the River.

The Salt Creek–High Country, East Fork Salt Creek, and Salt Creek Confluence corridors provide the most direct, non-disturbed connections between the River corridor habitat and large upland habitat areas south of the River. As noted above, the least cost analyses conducted by Penrod *et al.* (2006) identified these areas as important components of

regional habitat connectivity. Based on the Impact Sciences, Inc. (2005) mammal study and incidental observations (Dudek and Associates 2006B), there is frequent wildlife activity in these areas despite agricultural and grazing activities. It is likely that wildlife move from the River corridor to upland areas through the Salt Creek Confluence corridor.

The Castaic/Hasley Corridor was not identified by Penrod *et al.* (2006) as a regional linkage, but it allows for movement of many species such as coyote, mule deer, and possibly mountain lion, and functions as live-in habitat for many other species. Although the vicinity of Castaic Creek north of the Project area is becoming increasingly developed, it will continue to have connectivity value between the Santa Clara River and upland habitats to the northeast of the Project area extending to Castaic Lake and the Angeles National Forest.

Figure 4.5-31 also shows several tributary corridors in the Project area: No. 5: Potrero Canyon–Salt Creek; No. 6: Potrero Canyon; No. 7: Long Canyon; No. 8a: Humble Canyon; No. 8b: Lion Canyon; No. 8c: Exxon Canyon; 8d: Dead End Canyon; 8e: Middle Canyon; 8f: Magic Mountain Canyon; No. 9: Chiquito Canyon; No. 10: San Martinez Grande Canyon; No. 11: Off-Haul Canyon; and No. 12 Homestead Canyon. Under existing conditions, these corridors likely are used by most of the high and moderate mobility species for movement throughout the Project area, perhaps except for black bear, but they are subject to greater anthropogenic disturbances, such as cattle grazing, agriculture, and film production activities. They also have more remote and indirect connections to the regional habitat linkages identified by Penrod *et al.* (2006).

Wildlife Crossings. Wildlife crossings are locations where wildlife must pass through physically constrained environments (*e.g.*, roads, development) during movement within home ranges or during dispersal or migration between core areas of suitable habitat. Development and roads may transect or interrupt an existing natural crossing, creating dangerous or impassible barriers that impede the natural movement of a species and possibly expose it to higher risks of injury and mortality from adverse human interactions, such as increased vehicle collisions at roadways where no safe wildlife passage is provided (Meese *et al.* 2007).

When designing wildlife crossings, it is important to identify the natural passageways that target animals use to locate crossings. Often, artificial crossings are seldom used by wildlife when a more natural alternative or previously used crossings still exist. For example, Tull and Krausman (2001) found that, while 22% of radio-collared mule deer locations were in a designed crossing of a canal, there were indications that the deer crossed at other points along the canal. Tull and Krausman (2001) attributed the other crossings to the absence of significant urbanization along the canal and suggested that, as development encroached along the canal, the designed crossing would become more important.

Post-development drainages are typical pathways for wildlife movement across roads, although they are not the only pathways used. Structures where roads and drainages intersect are often constricted or confined in some way and provide funnel points for movement, such as road undercrossings, space beneath bridges, or pathways through large culverts. Wildlife crossings are used differently or at different frequencies, depending on the species and the conditions at the crossing. Although most existing structures, such as culverts or bridges under roads, were not originally designed to accommodate wildlife passage, they can be retrofit or redesigned to encourage wildlife use by restoring or maintaining native vegetation and "soft-bottom" natural substrates within the crossing, allowing natural lighting, using fences to guide larger species toward the crossing, locating crossings at pre-existing animal passages, and improving habitat adjacent to the crossing to provide cover and protection for wildlife (Carr *et al.* 2003; Meese *et al.* 2007). Some recommended design standards for different kinds of wildlife crossings are available from Ruediger and DiGiorgio (2007), as summarized in **Table 4.5-22**.

Table 4.5-22
Crossing Structure Type and Size: Recommendations for Different Species[1]

Crossing Structure	Round Culvert	Concrete Box Culvert	Multi-Plate Steel Arch	Open-Space Bridge, Bridge Extension	Overpass
Black bear	10'+	10'+ h × 20'+ w	10'+ h × 20'+ w	10'+ h × 20'+ w	75'+ w
Mountain lion	10'+	10'+ h × 20'+ w	10'+ h × 20'+ w	10'+ h × 20'+ w	75'+ w
Bobcat	48"+	48"+ h × 48"+ w	structures for larger animals will be adequate for smaller animals		
Coyote	48"+	48"+ h × 48"+ w	structures for larger animals will be adequate for smaller animals		
Small carnivores: badger, raccoon, skunk, weasel, and fox. Also accommodates smaller mammals, reptiles, and amphibians	36"+	36"+	structures for larger animals will be adequate for smaller animals		
Deer	10'+	10'+ h × 20'+ w	10'+ h × 20'+ w	10'+ h × 20'+ w	75'+ w
Key:					
Adequate for Passage					
Best for Passage					

[1] Adapted from Ruediger and DiGiorgio (2007). "Information in this table was established from current studies, including recommendations from biologists and engineers with extensive wildlife crossing experience. This table is a general guide to designing and choosing appropriate structures for many target species. Other factors, such as terrain, engineering feasibility, cost, and site-specific conditions are always a consideration. The table is meant only as a broad guideline to assist in the selection of wildlife crossings" (Ruediger and DiGiorgio 2007).

Although there are some general recommendations for the dimensions of crossing structures, as shown in **Table 4.5-22**, the specific factors that contribute most to the effectiveness and design criteria of structures used as wildlife crossings, such as bridges and box culverts, are still under debate. Among these factors, in addition to structural dimensions, are the use of fencing, existing landscapes, proximity to natural habitat edges and water features, the probability of human disturbance, and the intended species. Views differ regarding the most effective placement of wildlife crossings and whether structural features or location and landscape features are more important in determining ultimate success.

Several studies have shown that structural dimensions beyond the height and width of the crossing and related factors play primary roles in the success of providing adequate wildlife crossings between habitat fragmented by roads and highways. Reed *et al.* (1975) found openness to be a significant factor in determining relative effectiveness of structures in terms of use by deer and other species. In this study, the openness factor (or index) was a structural variable used as a measurement of ambient light in a structure and was calculated by the following equation: width times height divided by length (in meters) (Reed *et al.* 1975). Later studies also applied the openness index as one measurement for the effectiveness of wildlife movement at highway underpasses. For example, Donaldson (2005) found that the length of a structure should be short enough to result in an openness factor of at least 0.25 to discourage white-tailed deer from turning around at structure crossings. This study also determined that effective underpasses were easily accessible with level approaches and had clear lines of site to habitats on the far side (Donaldson 2005). Another study determined that use of crossing structures by raccoons and domestic cats and dogs was positively correlated with passage length, while use by mule deer was negatively correlated with the same factor (Ng *et al.* 2004). The importance of structural dimensions has been illustrated for both large predator and prey species. In Banff National Park, structural dimensions, including openness and width, were determined to be most significant only for ungulates while playing a less significant attribute for carnivores (Clevenger and Waltho 2000). However, later studies indicated structural passage by grizzly bears, wolves, elk, and deer to be strongly influenced by wildlife crossings that were high, wide, and short in length, and that black bears and cougars favored more constricted crossing structures (Clevenger and Waltho 2003).

Others have argued against the ultimate value that structural dimensions hold with respect to wildlife crossings. Many studies have identified several other factors as the most significant in contributing to the effectiveness of crossing structures. Beier and Loe (1992) have emphasized that the critical features of a wildlife corridor are not physical traits, such as its length or width or vegetation, but rather how well a particular piece of land fulfills several functions, including allowing wide-ranging animals to travel, migrate, and meet mates; plant propagation; genetic interchange; movement of

populations due to environmental changes and natural disasters; and allowing recolonization of habitats from which populations have been locally extirpated. Beier and Loe (1992) argue that these functions (rather than some minimum width) should be used to evaluate the suitability of land as a wildlife corridor. The Ng *et al.* (2004) study, discussed above, also identified correlations with several other factors. Coyote use of wildlife crossings showed a significant positive correlation with human activity and a negative correlation with developed habitat. For bobcats, the relationship between passage use and percentage of natural habitat was positive (Ng *et al.* 2004). Riley *et al.* (2006) contend that, to counteract genetic isolation, corridors across freeways could conceivably include more natural habitat so that home ranges could extend across freeways and rates of genetic exchange might be increased. Several studies have also indicated that fencing plays a significant factor in determining success. Although some species may use underpass or overpass systems without fences, some form of fencing does appear to be necessary for most species (Jackson and Griffin 2000). Ungulates commonly seek to avoid underpasses and will generally use them only if other access across the highway is barred (Ward 1982).

While the debate about the efficacy of wildlife crossings continues, at least three concepts are clear: (1) Protecting suitable habitat in the vicinity of crossing points is especially important; (2) consideration must be given to passage dimensions (Ng *et al.* 2004); and (3), if fence and passage systems are not designed for use by a broad range of wildlife, a project that facilitates passage for one species might constitute an absolute barrier for another (Jackson and Griffin 2000).

Existing man-made wildlife crossings in the Project vicinity are primarily located under SR-126, which, with high current traffic volume, is the main existing impediment to wildlife movement perpendicular to the Santa Clara River. **Figure 4.5-32** shows six of the largest existing crossings that can be accessed by wildlife coming directly from adjacent uplands or by moving along the Santa Clara River. Three of the crossings shown in **Figure 4.5-32** are in Ventura County west of the Project area. These six crossings are associated with current agricultural operations and are bridges or culverts large enough for vehicle passage, as illustrated in **Figure 4.5-32**. The large culverts in Ventura County are about 4.4 meters (14 feet, 7 inches) in height, 7.5 meters (25 feet) in width, and 51.8 meters (170 feet) in length, resulting in an openness factor of 0.65, which well exceeds the openness factor of 0.25 found by Donaldson (2005) to be adequate for white-tailed deer. They are therefore expected to provide adequate passage for high mobility ground-dwelling species such as mule deer, mountain lion, and black bear. The easternmost of the Ventura County crossings serve wildlife passing through the Project area *via* the Salt Creek corridors discussed above as well as Tapo Canyon in Ventura County. Within the Project area, there are existing crossings at San Martinez Grande Canyon, Chiquito Canyon, and at the Castaic Creek confluence with the Santa Clara

River. These crossings are short and open and include soft-bottom overpasses at the San Martinez Grande Canyon and Castaic Creek crossings and a large parallel set of box culverts at the Chiquito Creek crossing (**Figure 4.5-32**). These crossings should not significantly constrain current wildlife movement in the area.

Wildlife Buffers. The term "buffer" as used here refers to the area or zone between the urban development edge and an important biological resource, which is necessary to protect the resource from adverse edge effects such as habitat degradation, increased occurrence of non-native and urban-related species, increased predation from domestic animals and mesopredators, and other edge effects. (see **Subsection 4.5.5.1** for detailed discussion of secondary edge effects). Buffers typically are described as some minimum width between the development edge or disturbance source and the resource, and, all things being equal, the larger the buffer width is, the more protection a resource is provided. However, buffers usually also include different vegetation types, topographic features, or structures (such as fences) that provide some level of protection for the resource. For example, a strip of dense cactus in a relatively narrow buffer zone may effectively protect native wildlife from disturbance by humans or pets. Various combinations of width, dense vegetation, extreme terrain, artificial features (such as fencing), and management may interact in various ways to improve the buffer function and compensate for narrower intrinsic buffer zones (see CBI 2000). That is, where buffers are necessarily smaller in width, other environmental or project design features or management may be needed to offset the increased risk of disturbance. Because of the interactive and compensatory nature of buffer features, each edge/buffer situation needs to be evaluated separately to determine its effectiveness.

Although the more common understanding of buffer function refers to the protective functions discussed above, the buffer zone itself may provide important ecological functions beyond just protecting core habitat areas. For example, a buffer may both protect aquatic habitat and provide transitional and/or terrestrial habitat that supports the nonaquatic life history aspects of semi-aquatic reptiles and amphibians, such as foraging, nesting, aestivation, and hibernation (Semlitsch and Bodie 2003). Also, buffers may provide adjunct habitat that may be used and may be beneficial to a species but is not critical for a species. For example, least Bell's vireos have been documented foraging in upland shrub habitats adjacent to riparian nesting areas late in the breeding season (Kus and Miner 1989), but it is unknown whether this adjacent upland habitat is critical in their life history. Such foraging may be opportunistic and may only provide marginal benefits over foraging limited to riparian areas. However, providing upland shrub habitat adjacent to vireo nesting habitat should be considered a benefit for this species and incorporated in the open space design where feasible.

Because buffers are defined by the relationship between wildlands and the urban development edge, they do not strictly constitute an existing biological resource or condition prior to development; in other words, buffers cannot be defined without reference to an explicit project footprint. However, existing conditions and the documented distribution of special-status and sensitive biological resources in the Project area do allow for a description of where buffers will be important to consider in the environmental impact analysis.

Several special-status fish species in the Santa Clara River within the Project area (unarmored threespine stickleback, arroyo chub, and Santa Ana sucker) depend on the aquatic system to meet all of their life history requirements (*e.g.*, shelter, food, reproduction). Buffers can provide several functions that protect these species from adverse edge effects, such as increased stream temperatures due to reduced canopy cover. (Note: It is assumed that issues such as water quality and sedimentation are not strictly edge impacts because the point source can be anywhere in the watershed; therefore, these issues are addressed through project design features). Increased stream temperatures associated with a reduced canopy may directly affect habitat suitability for these species and may allow some exotic fish species that prefer warmer water to become established. Maintaining a riparian buffer zone along the River channel, therefore, is important for these three fish species.

Terrestrial habitat buffers along the Santa Clara River (including riparian habitat on terraces, upland vegetation communities (such as shrublands and grasslands), and agricultural areas) may provide essential habitat for meeting the life history needs of semi-aquatic special-status species, such as western spadefoot toad, arroyo toad, two-striped garter snakes, and southwestern pond turtle. Substantial data have been collected for movements of the southwestern pond turtle and the arroyo toad, providing some guidance for identifying adequate terrestrial buffers.

Southwestern pond turtles are known to utilize terrestrial habitats adjacent to aquatic environments in the summer for nesting and for over-wintering. Nests typically are located along stream or pond margins, but the movement of southwestern pond turtles probably is related to the availability of suitable nesting and over-wintering sites in relation to aquatic habitat and, thus, is likely to be very site-specific (Goodman (1997A; Rathbun *et al.* (1992). Although Rathbun *et al.* (1992) documented movements for nesting over 330 feet, over-wintering turtles may travel farther than for nesting, with a mean distance over 600 feet and a maximum of 1,640 feet observed by Reese and Welsh (1998) in northern California.

Similar to the southwestern pond turtle, the arroyo toad uses terrestrial habitats adjacent to aquatic areas for foraging, aestivation, and hibernation. Subadults and adults may

range widely into the surrounding uplands, commonly within 650 to 3,280 feet, but up to 1.2 miles (69 FR 23254–23328). Radiotelemetry studies by Ramirez demonstrated that arroyo toads typically burrow no farther than about 121 feet to 1,062 feet from the edge of a stream, with an average distance of about 52 feet (69 FR 23254–23328). A radiotelemetry study of arroyo toads in San Juan Creek in southern Orange County, which has a similar structure to the Santa Clara River (*i.e.*, a fairly wide active floodplain and relatively narrow wet channel, with agricultural operations adjacent to much of the creek), found that virtually all of the toad activity was limited to the active floodplain (Ramirez 2003).

Studies of the southwestern pond turtle and the arroyo toad indicate that, at minimum, the entire floodplain of the Santa Clara River, which ranges from 1,000 feet to 2,000 feet wide, may be used by these species. Given the long-distance movements made at least occasionally by these species, they potentially also use upland areas, including agriculture, next to the River corridor that are accessible and have suitable friable soils for burrowing.

The terrestrial buffer zone along the Santa Clara River also provides valuable habitat for native species that are attracted to ecotones that have high habitat diversity. Impact Sciences, Inc. (1997), for example, analyzed small mammal populations in upland habitats next to riparian areas along the Santa Clara River and found that home ranges tended to be smaller and more compact in high-quality habitat (*e.g.*, higher native shrub cover) compared to low-quality habitats (*e.g.*, disturbed or agricultural areas with little cover), and that the highest densities and diversity of small mammals occurred in high-quality upland habitat. These results suggest that high-quality habitats provide greater resources for small mammals and reduce the need to travel longer distances, thus reducing predation risk and other behavioral costs. High-quality habitats, such as those with higher native shrub cover, also provide greater protection from predators than low-quality habitat.

Impact Sciences, Inc. (1997) also conducted surveys in riparian areas and adjacent upland edges on the Santa Clara River and San Francisquito Creek immediately east of the Project area to characterize riparian bird diversity, abundance, and habitat use in these areas prior to development. These surveys were conducted prior to residential development adjacent to San Francisquito Creek; adjacent land use typically included agricultural and light industrial uses. Bird species (including both resident and migrant species) characterized in the scientific literature as highly "riparian-dependent" were observed within adjacent upland habitat. As noted above, the least Bell's vireo, for example, may forage in upland shrub habitats adjacent to riparian breeding habitat late in

the breeding season (Kus and Miner 1989). Where upland habitat was of high quality,[2] 99% of observations of riparian-dependent birds by Impact Sciences, Inc. (1997) were within 100 feet of the riparian edge; in low-quality upland habitat, 90% of such observations were within 100 feet of the riparian edge. All observations of these species in adjacent uplands occurred within 150 feet of the riparian edge. For species that are known to be riparian associates but not riparian dependents, 84% of birds were observed within 100 feet of the riparian edge in high-quality upland habitat and 93% of birds were observed within 100 feet of the riparian edge in low-quality upland habitat. As with riparian-dependent species, riparian associates were not observed beyond 150 feet from the riparian edge where high-quality upland habitat was present. The Impact Sciences, Inc. (1997) study indicates that riparian buffers along the Santa Clara River should range from a minimum of 100 to 150 feet in width for riparian-dependent birds and riparian associates, depending on the quality of the upland habitat; a larger buffer width would be required if the upland habitat were of low quality. If existing upland habitat quality is low, habitat enhancement in areas where the buffer is narrower could compensate for the smaller buffer.

While most of the focus of this subsection is on the buffer function along the Santa Clara River because of the high number of special-status species in the River corridor (including several listed species), buffers along the protected upland open space–urban development interface in the High Country SMA and Salt Creek area also are an important consideration. In particular, Potrero Village is bounded on the south and west by the High Country SMA and Salt Creek area. However, most of the planned development along this boundary is estate residential, which would have less potential for adverse edge effects than higher-density uses, assuming that project design features (*e.g.*, lighting) and other restrictions (*e.g.*, on landscape plants, irrigation, and runoff) are implemented. Likewise, the planned development at the boundary between open space and the Homestead West development is estate residential. In addition, because these interface areas are in fairly rugged terrain and are occupied by wildlife species that are generally widespread in the upland open space areas (*i.e.*, these areas do not support specific microhabitats or features that are a key resource for the upland species), buffers are not as critical in these areas as they are along the Santa Clara River corridor.

[2] Habitat quality was determined by evaluating seven variables: (1) shrub/tree cover variability; (2) percentage of shrub/tree cover; (3) percentage of ground cover; (4) average shrub/tree height; (5) percentage of herbaceous cover; (6) herbaceous cover variability; and (7) shrub/tree height variability.

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4.5.4 IMPACT SIGNIFICANCE CRITERIA

The significance criteria listed below derive from Appendix G of the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 *et seq.*) but have been modified to better suit the proposed Project. The lead agencies have applied these criteria when determining the significance of the Project's impacts on biological resources. Biological impacts would be significant if implementation of the proposed Project or its alternatives would:

(1) Have a substantial adverse effect, either directly or *via* habitat modifications, on any "special-status species" as such species are defined in **Subsection 4.5.3.4.5** and **Subsection 4.5.3.4.6**, and listed in **Subsection 4.5.3.1** of this EIS/EIR; or violate any federal, state, or local law which protects biological resources;

(2) Have a substantial adverse effect on any riparian habitat or other special-status natural community identified by federal, local, or state agencies;

(3) Have a substantial adverse effect on federally protected wetlands or substantial change to state-protected streambeds through direct removal, filling, hydrological interruption, loss of functions or services, or other means (evaluated in **Section 4.6**, Jurisdictional Waters and Streams, of this EIS/EIR);

(4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

(5) Conflict with any local plans, policies, or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

(6) Cause scouring of the riverbed to the point of removing a substantial amount of aquatic, wetland, or riparian habitats from the river channel (evaluated in **Section 4.2**, Geomorphology and Riparian Resources, of this EIS/EIR); and

(7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species**.**

Appendix G of the State CEQA Guidelines also includes the criterion of whether the project would conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plan. This criterion is not used in this EIS/EIR in the analysis of impacts to biological resources because there are no Habitat Conservation Plans; Natural Community Conservation Plans; or other approved local, regional, or state habitat conservation plans in the Project area or nearby vicinity.

In order to maintain consistency in the impacts analysis, the Corps has agreed to use these CEQA-based criteria for purposes of the EIS/EIR. However, the Corps will not formally adopt these CEQA-based criteria for general application; nor will the Corps rely solely on these CEQA-based criteria when assessing the impacts of *this* Project. Instead, the Corps will augment these criteria by applying additional federal criteria, as appropriate.

It should be noted that impacts deemed "significant" under these criteria may be significant on a local level only and may not be significant on a regional, state-wide, or national level.

4.5.5 IMPACTS OF THE PROPOSED PROJECT AND ALTERNATIVES

4.5.5.1 Impact Analysis Approach and Methods

This subsection describes the impact analysis approach and methods for Alternatives 2 through 7. Impacts are categorized as direct, indirect, and secondary for each alternative. See also **Section 1.0**, Introduction, for a discussion of direct, indirect, and secondary impacts. Direct and indirect impacts differ in regard to the Project component resulting in the impacts. As used here, direct impacts would occur as a result of implementation of the RMDP and SCP and include temporary disturbance and/or permanent loss of vegetation communities, including sensitive vegetation communities, general wildlife, and special-status plant and animal species. For the purposes of the impact analysis, the total loss of habitat for direct and indirect effects is evaluated in its entirety. However, Project impacts would be phased over 20 years (depending on market and economic conditions) such that not all permanent and temporary direct impacts would occur at the same time. The permanent impacts reported in this EIS/EIR would occur at different times and generally would be from east to west (*i.e.*, starting from the edge of existing developed areas and gradually proceed toward the more remote areas), allowing wildlife to adjust to the loss of habitat in increments (*e.g.*, by shifting foraging and breeding activities, movement, and dispersal). As RMDP associated temporary impacts are completed, restoration and revegetation of those areas would be implemented. This would provide ongoing replacement of the biological functions of the temporarily impacted areas. Where applicable for the wildlife species addressed in this EIS/EIR, the temporal phasing of the Project is considered in the analysis of impacts on the species. For example, a raptor species that forages in a wide variety of habitats will be able to forage in portions of the Project area not yet under construction or area designated for open space preservation. Depending on the species analyzed, and the extent of the ultimate amount of habitat loss, findings of less than significant, with or without mitigation, may be appropriate for species that will successfully adjust their activities and be able to meet their life history requirements (*i.e.*, foraging, breeding, movement, dispersal, and refuge) in the permanently preserved open space.

Direct permanent loss of vegetation communities and land covers would result from proposed RMDP improvements, including:

- Construction of bridges and associated piers and abutments;
- Road crossing culverts;
- Bank stabilization/protection that includes ungrouted rock riprap, turf reinforcement mats, and exposed gunite slope-lining protection under bridge crossings and their abutments;
- Drainage facilities that include partially lined open channels;

- Grade controls and other channel improvements, including grade control structures in tributaries; engineered natural channels in Potrero, Long, and Lion canyons; grouted sloping boulder drops; non-grouted boulder step-pools; soil-cement grade control structures; sculpted concrete drop structures; and check structures;
- Water reclamation plant outfall;
- Water quality control features, such as water quality basins, debris basins, detention basins, catch basin inserts, and biorention features;
- Various roadway improvements to SR-126; and
- Recreation facilities.

Permanent loss of non-native vegetation communities (California annual grassland and giant reed) and artificial land covers (agriculture, disturbed land, and developed areas) will also occur as a result of habitat restoration and enhancement activities.

Temporary loss of vegetation communities and land covers includes vegetation and land cover clearing, grading, and other Project-related disturbances (*e.g.*, temporary haul routes) in the Project area that temporarily displace the vegetation community or land cover that was present prior to construction. Temporary impacts would occur where grading or soil disturbance would occur for a short period of time (*e.g.*, along the edges of proposed facilities), but where no permanent structures would be constructed and no disturbance would occur.

Implementation of the proposed Project would also result in impacts to wildlife movement corridors and unique landscape features, such as the River Corridor SMA, High Country SMA, and Middle Canyon Spring.

Indirect impacts would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. Indirect impacts also include permanent loss of vegetation communities, including sensitive vegetation communities, general wildlife, and special-status plant and animal species. For purposes of analyzing indirect impacts, any temporary disturbance areas are included in the permanent footprint. (There are no temporary impacts identified for build-out of the Specific Plan, VCC, and Entrada planning areas.)

Secondary impacts are those reasonably foreseeable effects caused by Project implementation on remaining or adjacent biological resources outside the construction disturbance zone. Secondary impacts may affect areas within the defined Project area, but outside the construction disturbance zone, including open space, and areas outside the Project area, such as downstream effects. Secondary impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas. Both implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada

planning areas would result in short-term construction-related secondary impacts and long-term secondary impacts.

Each of these types of impacts (direct, indirect, and secondary) is discussed in greater detail below.

4.5.5.1.1 Direct Impacts of RMDP/SCP

Direct impacts represent the absolute physical loss of a biological resource due to clearing and grading associated with implementation of the RMDP and SCP under Alternatives 2 through 7 and are analyzed in six ways: (1) permanent loss of vegetation communities, land covers, and general wildlife and their habitat; (2) permanent loss of or harm to individuals of special-status plant and wildlife species; (3) permanent loss of suitable habitat for special-status species; (4) permanent loss of wildlife movement and habitat connectivity in the Project area; (5) temporary loss of vegetation communities, land covers, and general wildlife and their habitat; and (6) temporary loss of suitable habitat for special-status species.

4.5.5.1.1.1 *Permanent Impacts*

Permanent Loss of Vegetation Communities, Land Covers, and General Wildlife and Their Habitat. A distinction is made between vegetation communities, land covers, and habitat for the purpose of the analysis in this section. Vegetation communities correspond to the Vegetation Classification and Mapping Program "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003). "Land cover" refers to artificial or human-altered areas, including active agriculture, disturbed land, and developed land. "Habitat" is defined by Lincoln *et al.* (1998) as "the locality, site and particular type of local environment occupied by an organism." "Habitat," as used in this EIS/EIR, refers to vegetation communities and land covers specifically used by plant and wildlife species in the Project area, and is often some combination of vegetation communities and land covers. Habitats are defined for each special-status species, as applicable for the species and the Project area. Modeled suitable habitat represents vegetation communities and land covers in the Project area with characteristics such as vegetation constituents and structure and other physical features that support the life history requirements of the particular species. The identified species are not documented to occur within all of the modeled suitable habitat within the Project site; however, for purposes of analysis of the species, it is assumed that all modeled suitable habitat for a particular species could support the species for all or some part of its life history, including foraging, breeding, refuge, aestivation/hibernation, wintering, *etc.* (For suitable habitat models, see RMDP (Dudek 2008D) *Appendix C – Species Preserve Report*, which provides a list of suitable habitats for most of the special-status species known or expected to occur within the RMDP preserve area in

Appendix 1.0.) For example, suitable breeding and foraging habitat for the southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) in the Project area is defined as California sagebrush scrub (including all associations, such as California sagebrush–black sage, as well as burned and disturbed areas), and California sagebrush scrub/undifferentiated chaparral. For other species, breeding and foraging habitats are analyzed separately because they are distinctly different and impacts may be proportionally different. For example, for the long-eared owl (*Asio otus*), breeding habitat is defined as southern coast live oak riparian forest, southern cottonwood–willow riparian forest, southern willow scrub, coast live oak woodland, mixed oak woodland/grassland, and valley oak woodland. Long-eared owl foraging habitat is defined as agriculture, California annual grassland, purple needlegrass grassland, mixed oak woodland/grassland, and valley oak/grassland. Even if very little breeding habitat was lost, a large loss of foraging habitat could significantly affect the long-eared owl in the Project area.

Several species rely on specific microhabitats rather than broad landscapes, such as the western spadefoot toad (*Spea hammondii*) that breeds in seasonal aquatic habitat, such as ephemeral pools filled by rain or agricultural runoff in the lower and flatter portions of the Project area, and within seasonal drainages and existing ponds. Suitable habitat was quantified for some species that use discrete microhabitats (*e.g.*, undescribed snail, undescribed sunflower), but not all, as appropriate for each species. For those species for which suitable habitat was not quantified, discrete microhabitats and habitat impacts are discussed qualitatively.

Permanent loss of vegetation communities and land covers includes vegetation and land cover clearing and/or grading in the Project footprint for Alternatives 2 through 7, designated by final grading plans for construction of physical facilities that permanently displace the vegetation communities or land covers that were present prior to construction. Permanent loss of vegetation communities and land covers is reported as acres removed and percentage of total acres in Project area removed as a result of implementation of Alternatives 2 through 7. Direct permanent loss of vegetation communities would result from proposed RMDP improvements. Permanent loss of artificial landcovers will also occur as a result of habitat restoration and enhancement activities.

Permanent loss of common wildlife and their habitat are addressed qualitatively for Alternatives 2 through 7 by describing the general effects of the permanent loss of individuals and habitat resulting from the RMDP and SCP, including loss and displacement of species during and following construction, and the long-term effect of the Project on the status and distribution of common wildlife species on site.

Section 2.0 contains the complete Project description of the RMDP improvements.

Permanent Loss of or Harm to Individuals of Special-Status Plant and Wildlife Species. Loss of or harm to individuals of special-status species includes impacts that result in mortality or injury of individuals (including removal of or damage to plants) that can be immediately attributed to Project construction activities such as vegetation clearing and/or grading. How loss or harm to individuals can occur for different species may vary, but the result is a net permanent loss of a portion of a species population. For example, for fossorial (burrowing) species, such as small rodents, as well as reptiles and amphibians in certain phases of their life cycles (*e.g.*, hibernation or aestivation), equipment used for excavation or grading can cause direct mortality, or injure or entomb individuals, resulting in their eventual death. Vegetation clearing and/or grading can also result in destruction of birds' nests, resulting in the loss of eggs and young. For special-status plant species, loss of or harm to individuals is reported as the loss of individuals or loss of acreage of mapped plant population polygons or acreage of habitat in which the species occurs, as applicable. For most special-status wildlife species, loss of or harm to individuals is not quantified as the number of individuals lost or harmed, but rather is based on the proportion of suitable habitat that would be lost, because data on species abundance (*e.g.*, number of individuals per acre) generally are not available. If only documented locations for a species were to be used for the impact analysis, the amount of impacts to individuals could be severely underestimated because of the relative lack of abundance data for wildlife compared to plants. For example, for the San Diego desert woodrat (*Neotoma lepida intermedia*), a relatively common rodent in upland shrub habitats on site, the RMDP would permanently impact about 80 acres suitable habitat, and it can be inferred that some individuals would be lost or harmed during clearing and/or grading activities.

Permanent Loss of Suitable Habitat for Special-Status Species. Similar to vegetation communities and land covers, permanent loss of suitable habitat for special-status species includes clearing and/or grading in the Project footprint under Alternatives 2 through 7, designated for construction of physical facilities that permanently displace the suitable habitat that was present prior to construction. Permanent loss of suitable habitat is reported as the acres removed and the percentage of total acres in the Project area removed as a result of the Project construction activities for Alternatives 2 through 7. Direct permanent loss of suitable habitat for special-status species would result from proposed RMDP activities, as described above for permanent loss of vegetation communities and landcovers.

Permanent Loss of Wildlife Movement and Habitat Connectivity in the Project Area. As described in **Subsection 4.5.1**, the impact analysis for special-status wildlife

species is organized by wildlife "guilds," which are groups of species that have similar ecological resource requirements and similar roles in the ecological community. Species within a particular guild also are likely to be affected in similar ways by Project impacts to wildlife movement and habitat connectivity. For example, semi-aquatic species, such as the arroyo toad (*Bufo californicus*) and the southwestern pond turtle (*Actinemys marmorata pallida*), rely both on aquatic and adjacent terrestrial habitat to meet their life history requirements. Neotropical migrants that nest in riparian habitats on site also will be affected in similar ways. Thus, grouping species by guilds allows for a more efficient and ecologically meaningful way of analyzing Project impacts to wildlife movement and habitat connectivity under Alternatives 2 through 7.

4.5.5.1.1.2 *Temporary Impacts*

Temporary Loss of Vegetation Communities, Land Covers and General Wildlife and Their Habitat. Temporary loss of vegetation communities and land covers includes vegetation and land cover clearing and grading associated with construction of proposed temporary haul roads and construction of proposed permanent new access roads, grade control structures, buried bank protection, installation of culverts, and other improvements required for Alternatives 2 through 7. The temporary loss of vegetation communities and landcovers would occur where grading or soil disturbance would occur for a short period of time (*e.g.,* along the edges of proposed facilities), but where no permanent structures would be constructed and no disturbance would occur. Areas temporarily disturbed by construction activities would be restored and revegetated with a native species mix similar to that which existed prior to disturbance following completion of work in the area. Native plant material would be crushed and stockpiled for later use in revegetation. After the construction work is completed, the area would be restored to its original contours and elevation, with salvaged native vegetative debris spread out over the disturbed area to allow seeds and propagules to become established naturally.

Temporary loss of vegetation communities and land covers is reported as acres removed as a result of Alternatives 2 through 7. Direct temporary loss of vegetation communities and land covers would result from proposed RMDP improvements that do not day light above the natural contours of the ground surface, including buried bank stabilization, buried storm drains, utility crossings, and temporary haul routes for grading equipment across the Santa Clara River. Temporary impacts may also occur in construction areas for access and haul roads, and on-site staging and storage areas where these activities cannot be sited in designated grading areas.

Temporary loss of common wildlife and their habitat is addressed qualitatively by describing the general effects of the temporary loss of individuals and habitat resulting

from the RMDP and SCP, including loss and displacement of species during and following construction, and the long-term effect of the Project under Alternatives 2 through 7 on the status and distribution of common wildlife species on site.

Temporary Loss of Suitable Habitat for Special-Status Species. Also similar to vegetation communities and land covers, temporary loss of suitable habitat for special-status species includes clearing, grading, and other Project-related disturbances (*e.g.*, temporary haul routes) in the Project area that temporarily displace the suitable habitat that was present prior to construction. Temporary loss of suitable habitat is reported as acres removed as a result of the Project. Direct temporary loss of suitable habitat would result from proposed RMDP activities under Alternatives 2 through 7, as described above for permanent loss of vegetation communities and land covers.

4.5.5.1.2 Indirect Impacts

Indirect impacts represent the absolute physical loss of a biological resource due to build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7 and are analyzed in four ways: (1) permanent loss of vegetation communities, land covers, and general wildlife and their habitat; (2) permanent loss of or harm to individuals of special-status plant and wildlife species; (3) permanent loss of suitable habitat for special-status species; and (4) permanent loss of wildlife movement and habitat connectivity in the Project area.

For the purpose of analyzing indirect impacts to vegetation communities and land covers and suitable habitat due to clearing and grading associated with build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7, it is assumed that all of the designated Project footprints will be graded. For purposes of analyzing indirect impacts, any temporary disturbance areas are included in the permanent footprint for each alternative (there are no temporary impacts identified for build-out of the Specific Plan, VCC, and Entrada planning areas).

4.5.5.1.2.1 *Permanent Impacts*

Potential permanent impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7, analyzed in **Subsection 4.5.5.2**, are listed below and described in detail above in **Subsection 4.5.5.1.1**.

- Permanent loss of vegetation communities, land covers, and general wildlife and their habitat;
- Permanent loss of or harm to individuals of special-status plant and wildlife species;
- Permanent loss of suitable habitat for special-status species; and
- Permanent loss of wildlife movement and habitat connectivity in the Project area.

4.5.5.1.3 Secondary Impacts

Secondary impacts, as used in **Section 4.5** of this EIS/EIR, are those reasonably foreseeable effects caused by Project implementation on remaining or adjacent biological resources outside the construction disturbance zone (*i.e.*, secondary impacts may affect areas within the defined Project area but outside the construction disturbance zone, including open space, and areas outside the Project area, such as downstream effects). Secondary impacts would occur as a result of implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7. Secondary impacts are characterized as resulting from two main different sources: (1) short-term construction-related impacts and (2) long-term impacts related to implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. The long-term secondary impacts are further categorized as landscape-level impacts and open space–urban interface (or "edge") impacts. **Subsection 4.5.5.2** analyzes each of these potential secondary impacts on vegetation communities and land covers, unique landscape features, general wildlife, and generally for special-status plant species. The impact analysis for general wildlife (which includes special-status species) is organized by guilds that are based on common ecological requirements and/or responses to secondary impacts by groups of species (*e.g.*, riparian birds, raptors, low mobility reptiles and amphibians). Individual impact analyses for each special-status wildlife and plant species are presented in **Subsection 4.5.5.3**.

4.5.5.1.3.1 *Short-Term Construction-Related Secondary Impacts*

Hydrological Alterations and Water Quality Impacts. Construction of RMDP facilities, including bank stabilization, construction of bridges and associated piers and abutments, and construction of drainage culverts, as well as mass grading associated with build-out of the Specific Plan, VCC, and Entrada planning areas, could result in short-term hydrologic and water-quality-related impacts adjacent to and downstream of the impact areas. Short-term hydrological alterations primarily associated with the RMDP include changes in flow rates and patterns in streams and rivers, and dewatering that may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities, and aquatic species (*e.g.*, fish), semi-aquatic species (*e.g.*, frogs, toads, and some reptiles), and riparian nesting birds. Water temperature changes also may occur due to

short-term changes to the active channel morphology, thus affecting aquatic habitat suitability for aquatic and semi-aquatic species that have specific thermal tolerances. Short-term water quality impacts potentially occurring from the RMDP and Project area build-out include chemical and toxic compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation.

Erosion and Chemical and Toxic Compound Pollution in Uplands. Erosion and chemical and toxic compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials) may also affect upland vegetation communities, wildlife habitats, and wildlife species.

Dust. Excessive dust can decrease the vigor and productivity of plant communities through effects on light and penetration as well as photosynthesis, respiration, transpiration; increased penetration of phytotoxic gaseous pollutants; and increased incidence of pests and diseases.

Construction Noise. Construction noise may affect essential behavioral activities of wildlife in several ways. Excessive noise may affect birds, for example, in at least four ways: (1) Noise may be annoying and cause birds to abandon nests that are otherwise perfectly suitable; (2) noise can be stressful and may raise the level of stress hormones, interfering with sleep and other activities; (3) intense noise can cause permanent injury to the auditory system; and (4) noise can interfere with acoustic communication by masking important sounds or sound components (Dooling 2006). Similar effects may occur in other taxa. Noise may interfere with communication in toads and frogs that use calls to advertise their location and attract mates (*e.g.*, Barrass and Cohn 1984). Loud noise, such as off-road vehicles, may damage the hearing of some terrestrial species (Berry 1980; Brattstrom and Bondello 1983).

Vibration. Vibration caused by construction equipment may affect essential behavioral activities and the habitat of wildlife in several ways. Vibration from equipment operating in creeks and other aquatic habitats may affect fish and semi-aquatic species, causing them to abandon areas. Vibration may also directly disturb terrestrial species that occupy burrows, dens, and depressions, such as rodents, coyotes (*Canis latrans*), badgers (*Taxidea taxus*), and lagomorphs (rabbits and hares), causing them to abandon these areas. Excessive vibration might cause the collapse of burrow systems and dens in areas with highly friable soils.

Lighting. Lighting may affect essential behavioral activities, physiology, population ecology, and ecosystems of both diurnal and nocturnal wildlife. Longcore and Rich (2004) call these effects "ecological light pollution" and identify three types of effects:

(1) chronic or periodically increased illumination; (2) unexpected changes in lighting; and (3) direct glare. Chronic increased illumination includes skyglow, lighted buildings and towers, streetlights, and security lights. Unexpected changes may occur from vehicle lights or other discrete events such as flares or spotlighting by law enforcement helicopters. Direct glare may be chronic or unexpected.

Longcore and Rich (2004) address the ecological effects of ecological light pollution at three levels: (1) behavioral and population ecology; (2) community ecology; and (3) large-scale ecosystem functions. Effects at the behavioral and population ecology level include orientation/disorientation and attraction/repulsion, reproduction, and communication.

Orientation and disorientation are responses to ambient light levels, while attraction and repulsion are responses to the source of light (*e.g.*, moths attracted to a light bulb). Orientation includes artificially expanding behavioral repertoires of normally diurnal or crepuscular species, such as foraging or territorial advertisement or mate attraction (*e.g.*, singing birds), into nighttime periods. Disorientation may occur in nocturnal species that normally orient during dark periods and whose visual systems are adapted to low light levels. Attraction to lights affects birds that may suffer injury or mortality due to collisions with lighted structures. Many insects are attracted to light sources, resulting in high numbers of prey being taken by nocturnal insectivores, such as bats. Repulsion of nocturnal wildlife by lights is probably quite common and may cause them to avoid lighted areas in their normal home ranges.

Wildlife reproduction may be affected by lighting in various ways. Movement to breeding areas, chorus behavior, and mate selection by some amphibians may be affected (Longcore and Rich 2004). Lighting may disturb the nighttime rest and sleep periods of diurnal species, including most passerine (perching) birds, having similar effects as noise, including annoying individuals and causing them to abandon nests that are otherwise perfectly suitable. Nest site selection by some birds may be affected by light, with nests being established farther from light sources (Longcore and Rich 2004). Artificial light may simulate increased day length, affecting reproductive cycles by triggering premature reproductive activity at a time when environmental conditions are not conducive to successful reproduction (*e.g.*, cold temperatures and/or poor food resources). Because light may interfere with sleep, it can be stressful and may disrupt normal biological rhythms and raise the level of stress hormones, which may in turn affect reproductive capacity.

At the level of community ecology, ecological light pollution may affect competition and predation (Longcore and Rich 2004). Behavioral interactions by groups of species may

be affected by lighting, as species move into the "light niche" (Longcore and Rich 2004). Species groups that normally partition foraging periods in relation to ambient light levels may be in direct competition under artificial light conditions. Likewise, species that are adapted to higher light levels (*e.g.*, crepuscular species) may outcompete strictly nocturnal species that normally forage in the darkest part of the night.

Lighting may increase the risk of predation of both nocturnal and diurnal species because they may be more detectable to nocturnal predators. Some species, such as amphibians, may be attracted to light because insect prey may congregate around light sources, which may in turn increase the risk of the amphibians being preyed upon. Longcore and Rich (2004) characterize this as a tradeoff in the benefit of foraging longer (or at richer sources) with the cost of higher predation risk. Many small species, such as rodents, rabbits, snakes, and bats, actually forage at lower rates at high illumination levels (Longcore and Rich 2004), which may be a biological adaptation to high levels of moonlight. Overall, chronic ecological light pollution may favor light-tolerant species over those that are dark-adapted (Longcore and Rich 2004).

The various levels of ecological light pollution ultimately may affect large-scale ecosystem functions in ways not yet understood, as effects at the behavioral and population ecology and community ecology levels reverberate through the system (Longcore and Rich 2004).

Ecological light pollution directly associated with construction ultimately would be temporary, but it may be considered chronic to some extent in terms of effects on wildlife. For example, lighting for security and public safety in some construction areas may extend for several months or more, thus potentially disrupting critical phases of species' life cycles, such as reproduction, or causing animals to abandon lighted areas. Other lighting impacts may be short-term or unexpected. Lighting for nighttime construction or maintenance of construction equipment typically involves high-intensity lighting systems that may have very wide light sheds and high glare values. Vehicle ingress and egress at construction sites may occur during twilight or nighttime hours (especially during winter months), resulting in unexpected changes.

Increased Human Activity. Increased human activity in construction areas could affect essential behavioral activities and physiology of wildlife. Similar to noise and lighting effects, increased human activity could disturb nocturnal animals during their rest or sleep periods, annoying them and causing them to abandon nests or den sites, as well as disrupting their normal biological rhythms and raising the level of stress hormones. Abandonment (even temporary) of active nests or dens increases the risk to eggs, nestlings, fledglings, and other dependent young. Flushing animals from nests, dens, and

other refuges also increases their risk of injury or mortality from collisions with construction equipment and other vehicles, as well as predation. Human presence may also alter the spatial behavior of animals, causing them to avoid certain parts of their home range, which may prevent them from using critical resources, such as water.

Temporary Fencing. Temporary fencing, such as snow fencing, may provide some protection for wildlife by keeping them out of construction zones, but also may inhibit the movement of some species that have large home ranges, such as coyotes and mule deer (*Odocoileus hemionus*). Disrupting the ability of these species to move freely throughout their ranges may alter their foraging and social behavior, and may expose them to greater risks in other areas they may normally avoid or use less frequently due to lower habitat suitability, greater risks of predation, or greater risks of vehicle collisions.

Accidental Clearing, Trampling, or Grading. Accidental clearing, trampling, or grading of vegetation communities and wildlife habitat outside designated construction zones may occur during construction activities for various reasons, including incorrect construction grading plans, human error in interpreting grading plans, human error or accidents in operating construction equipment, and misunderstandings or disregard by construction personnel in adhering to construction plan requirements, including avoidance of natural resources.

Oak Tree Root Impacts. Oak tree root systems may be affected during construction due to soil compaction, pollutants, or toxic compounds.

Trash and Other Debris. Trash and other non-toxic debris associated with construction activities can degrade vegetation communities and wildlife habitat, and can attract nuisance and pest species. Trash and debris include discarded construction-related materials, such as packaging materials and plastic sheeting, that may be dispersed into natural areas by wind or along creeks and streams. Trash generated by construction personnel, such as food packaging and cigarette butts, also can be dispersed by wind and water into natural areas. Pest and predatory species, such as crows and ravens, seagulls, skunks, and raccoons, may be attracted to discarded food.

4.5.5.1.3.2 *Long-term Secondary Impacts Related to Implementation of the RMDP and SCP, and Build-Out of the Specific Plan, VCC, and Entrada Planning Areas*

Long-term secondary impacts resulting from implementation of the RMDP and the build-out of the Specific Plan, VCC, and Entrada planning areas generally can be categorized as (1) landscape level impacts or (2) "edge" effects that generally occur along the open space–urban interface. These potential impacts are listed here with a brief summary of their effects on biological resources. **Appendix 4.5** (Newhall Ranch Resource

Management and Development Plan: Wildlife Habitat Buffers and Connectivity White Paper (Dudek 2008C)) contains a more complete treatment of long-term secondary impacts. The SCP is a preservation plan and would not have long-term adverse secondary impacts.

Landscape-Level Secondary Impacts. Landscape-level secondary impacts under Alternatives 2 through 7 include foreseeable impacts that can result in large-scale habitat degradation in open areas and an associated reduction in effective total habitat area, which, in turn, reduces effective population sizes of plant and wildlife species and increases the risk of local population extinctions. Landscape-level secondary impacts also include habitat fragmentation and isolation effects resulting from interposing urban development between large, core habitat areas and decreasing effective biological connections between the fragmented habitat areas.

Bridge/Road Crossing, Traffic Noise, and Lighting. Traffic noise and lighting are typically discussed in the context of edge effects, but they can also affect wildlife at the landscape level if they interfere with movement and dispersal; *i.e.*, they can functionally isolate populations if they inhibit wildlife movement. Depending on the ultimate Project approved, up to three bridges would be constructed over the Santa Clara River corridor at Commerce Center Drive, Long Canyon Road, and Potrero Canyon Road. Also depending on ultimate Project approval, bridges or culverted road crossings would also be constructed over major tributaries such as Chiquito Canyon, Long Canyon, San Martinez Grande Canyon, Potrero Canyon, Lion Canyon, and Ayers Canyon. Chronic traffic noise from the bridges could have the same effects on wildlife as those discussed above for construction noise, although many species may adapt to chronic noise or avoid noisy areas altogether (see discussion in Dudek 2008C, included in **Appendix 4.5**). Chronic traffic noise could also interfere with the ability of small mammals to hear predators such as hawks and owls (although noise may also interfere with the ability of nocturnal predators such as owls to detect prey). Likewise, lighting for bridges may have the same effect on wildlife as discussed above for construction-related impacts.

Downstream Effects of Drainage and Control Facilities and Water Reclamation Plant (WRP) Outfall. Potential downstream effects of drainage, flood control, and WRP facilities may occur, including altered flow rates and timing (*e.g.*, peak flows from storm events and perennial flows from urban sources, such as landscape irrigation and other forms of runoff). These effects could alter downstream aquatic and riparian vegetation and wildlife habitat for many species, including aquatic and semi-aquatic species and riparian birds. For example, excessive and/or perennial runoff could increase downstream ponding, converting riparian communities to marsh, and thus, altering species' communities. Water thermal regimes may also be altered and potentially exclude

species with narrow thermal tolerances. It should be noted, however, that flood control facilities would be designed pursuant to adopted Best Management Practices (BMPs) and NPDES permitting requirements. The Newhall Ranch Subregional Stormwater Mitigation Plan prescribes the post-development stormwater management facilities to treat or detain runoff to ensure compliance with the Basin Plan and other policies such as hydromodification. Further, drainage structures would focus on managing the amount of debris that would enter the drainage system, balancing the amount of sedimentation or erosion that would occur, and maintaining the quality of water in the drainage system at a level consistent with the Clean Water Act and the Porter-Cologne Water Quality Control Act.

The WRP outfall would be constructed from the WRP through the bank stabilization to the bed of the Santa Clara River. An earthen channel and adjacent walkway would be constructed to reach the actual flow path of the River. The walkway would be used to obtain water samples, as required in the NPDES permit for the WRP. The channel and walkway would be maintained periodically due to storm damage, vegetative cover, and water erosion. Depending on the extent of maintenance and repair activities (*e.g.*, type of equipment, duration, and timing), secondary impacts resulting from these activities could be similar to the construction-related secondary impacts discussed above, including hydrologic and water quality alterations, erosion, chemical and toxic compounds pollution, dust, noise, vibration, lighting, increased human activity, temporary fencing, accidental clearing, trampling, grading, oak tree root impacts, and trash and other debris.

Downstream Effects of Water Quality Control Facilities. Water quality control facilities are required to comply with Clean Water Act section 402(p), which regulates construction, municipal, and industrial stormwater discharges under the NPDES program. The Stormwater Pollution Prevention Plan is required to implement BMPs to reduce or eliminate pollutants in stormwater discharges. Proposed facilities include water quality basins, detention basins, catch basin inserts, bioretention (vegetated swales), and solids separator units. Although these facilities are designed to prevent degradation of downstream resources, they could affect downstream hydrology, such as peak flow volume and timing, and geomorphology (*e.g.*, sediment transport) that could have secondary impacts on vegetation communities, wildlife habitat, and species composition.

Monitoring and Maintenance of RMDP Facilities. Ongoing monitoring maintenance of RMDP facilities will be conducted by the Los Angeles County Department of Public Works (DPW), and may include removal of vegetation from facilities to protect their function and structural integrity, clearing of storm drain outlets to ensure proper drainage, removal of ponded water to control odors and mosquitoes, as-needed repairs and maintenance of bridges, as-needed repairs of bank protection, as-needed clearing of

detention and debris basins and removal of deposits per approved maintenance procedures, and emergency maintenance activities. These activities generally would require the use of a backhoe, or similar construction equipment, to excavate areas to remove vegetation, debris, sediment, *etc.* On-highway trucks would be used to remove excavated materials from sites. Potential secondary impacts from these activities would be similar to several of the construction-related secondary impacts discussed above, including hydrologic and water quality alterations, erosion, chemical and toxic compounds pollution, dust, noise, vibration, lighting (*e.g.*, during emergency operations), increased human activity, accidental clearing, trampling, and grading, and trash and other debris.

Maintenance of Utility Crossings. Various electrical, sewer, water, gas, and communication lines would be installed across the Santa Clara River, Chiquito Canyon, San Martinez Canyon, Potrero Canyon, and Long Canyon. Periodic maintenance and repair of these utilities will be required, resulting in potential for temporary secondary impacts associated with these activities. These impacts would similar to the construction-related secondary impacts discussed above, including hydrologic and water quality alterations, erosion, chemical and toxic compounds pollution, dust, noise, vibration, lighting, increased human activity, temporary fencing, accidental clearing, trampling, grading, oak tree root impacts, and trash and other debris.

Recreational Facilities. A key component of the Specific Plan is a comprehensive system of bicycle, pedestrian, and equestrian trails throughout the Specific Plan area that provides public access to open space in the Specific Plan area. Several trail crossings would be required in or adjacent to the Santa Clara River corridor and drainages in the Specific Plan area. In addition to the trail elements adopted in the Master Trails Plan, the RMDP proposes to construct three to five nature viewing platforms that would be located in CDFG/Corp jurisdictional areas. Use of the trails and viewing platforms could result in secondary impacts to vegetation communities, wildlife habitats, and wildlife species, including trampling of vegetation, creation of unauthorized trails, increased human presence around, and potential harassment of or harm to, wildlife (*e.g.*, causing abandonment of nest sites, collection of animals, crushing by bicycles and horses, *etc.*), potential harassment of or harm to wildlife by pets, contact with pet fecal material, and potential for transmission of diseases and parasites as well as trash and debris.

Improvements to SR-126. Improvements to SR-126 include expansion of the existing two-lane bridges over Chiquito and San Martinez Grande canyons to four-lane bridges, and the existing six-lane bridge over Castaic Creek would be expanded to eight lanes. The additional lanes would provide for increased vehicle trips as build-out of the Project area, and in the region, occurs. Traffic noise along SR-126 is expected to increase and

potentially have increased noise effects on wildlife, as discussed above. Increased traffic on SR-126 also could increase polluted runoff from the roadway into the Santa Clara River and tributaries during rain events.

Stream Restoration and Enhancement Activities. Riparian resources along the Santa Clara River that are impacted by the RMDP will require restoration, with the objective of providing habitat quality and values similar to pre-Project conditions. Associated habitat enhancement activities include rehabilitation of native areas that have been disturbed by past activities (*e.g.*, grazing, roads, oils and gas operations, *etc.*) or invaded by non-native plant species such as giant reed (*Arundo donax*) and tamarisk (*Tamarix* spp.). Secondary effects of restoration and enhancement activities may include altered hydrology and geomorphology, as well as altered vegetative structure in the Santa Clara River corridor that may favor some wildlife species, but not others. For example, increased riparian habitat cover benefitting riparian birds may reduce open stream channels used by fish, reptiles, and amphibians. However, the River is a dynamic system subject to "resetting" events that generally govern long-term habitat cycles. The net increase in riverine habitat achieved by rehabilitating currently disturbed areas will provide additional long-term value to the system. Therefore, it is anticipated that the net long-term result of restoration and enhancement activities on habitat quality and values in the Santa Clara River system will be positive.

Habitat Fragmentation and Isolation. Habitat fragmentation and isolation of plant and wildlife populations, including impacts on wildlife movement and dispersal as well as impacts on plant pollinators and seed dispersal, may cause extinction of local populations as a result of two processes: (1) reduction in total habitat area, which reduces effective population sizes; and (2) insularization of local populations, which affects dispersal and immigration rates (Wilcox and Murphy 1985; Wilcove *et al.* 1986). Because of complex community-level interactions (*e.g.*, mutualistic species, habitat guilds, and keystone species), the loss of one or a few species from a habitat patch as a direct result of habitat fragmentation (primary extinctions) also may result in multiple "secondary" extinctions within the habitat patch (Wilcox and Murphy 1985).

The build-out of the Specific Plan, VCC, and Entrada planning areas will result in potential habitat fragmentation and isolation effects as a result of large-scale development of uplands and associated roads adjacent to the Santa Clara River corridor and within and adjacent to major tributary drainages, including Chiquito Canyon, San Martinez Grande Canyon, and Castaic Creek north of the Santa Clara River, and Potrero Canyon, Long Canyon, Lion Canyon, and Middle Canyon south of the River. This build-out will alter the spatial relationships of on-site vegetation communities and species populations and will potentially affect the connectivity among important resource areas. Movement and

dispersal of resident low-mobility species (*e.g.*, rodents and terrestrial reptiles) may be impeded by urban development and roadways that cross open space areas, resulting in potential connectivity "bottlenecks." Build-out will also alter the movement behavior of high-mobility wildlife species such as the mule deer, the mountain lion (*Puma concolor*), and the black bear (*Ursus americanus*) that probably use the Project area for dispersal movements among large habitat areas in the region.

These potential impacts are analyzed in the context of known and presumed species distributions and movement patterns in the Project area and the future proposed open space system designed to reduce and mitigate habitat fragmentation and isolation effects.

Altered Natural Wildfire Regimes. Urbanization alters natural wildfire regimes in terms of the frequency of fires, but also in regard to the strategic and tactical approaches to preventing and fighting wildfires. Wildfire in Mediterranean-type ecosystems affects the structure and function of vegetation communities. In most cases, fires are quickly suppressed for public safety and to protect property, but in some cases fires become uncontrollable and catastrophic, in part because past fire suppression has resulted in much greater fuel loads in urbanized environments than would occur under natural regimes. These types of fire regime alteration (suppression and catastrophic and/or frequent fires) can drastically affect plant and animal communities, such as California sagebrush scrub, through increases or decreases in the natural fire interval to which the plant and animal communities have adapted. Longer-than-natural fire intervals can result in excessive buildup of fuel loads, so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral that rely on shorter intervals for rejuvenation. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and, in some cases, result in permanent transitions of the vegetation to non-native communities, such as annual grassland and weedy communities (*e.g.*, Malanson and O'Leary 1982; Keeley 1987; O'Leary *et al.* 1992). The alteration of vegetation communities consequently has profound effects on the wildlife species communities.

Altered wildfire regime, and particularly increased incidence of fires in urbanizing areas, may also be considered an edge effect because often these fires are a result of human activities at the open space–urban interface, such as accidental ignitions from sparks from equipment, such as mowers striking rocks, cigarettes, children playing with matches, *etc.*, as well as intentional ignitions, such as arson. However, fires may be ignited by downed or arcing powerlines or cars catching on fire along roadways in fairly remote areas. More importantly, the effect of large wildfires is at the landscape level, especially when fires are quickly spread by strong winds.

Increased Traffic and Vehicle Collisions. The increased density and capacity of roads associated with development results in increased risk of vehicle collisions where wildlife use or attempt to cross roadways, particularly in areas that were frequently used by wildlife before roads and other development were built. Factors related to the number and types of species affected include vehicle speeds, traffic volume, traffic pulses, accessibility of cover, structure of the road (*e.g.*, whether the road is raised or at grade level with the surrounding environment), barrier walls to prevent access to a roadway, and availability of alternative crossing, such as bridges and culverts (Dodd *et al.* 2004).

SR-126 is a high-volume, high-speed arterial highway that runs east–west through the Project area and parallel to the Santa Clara River corridor. Wildlife that attempt to cross SR-126 are currently at high risk of vehicle collisions under existing conditions. Build-out of the Project area will increase traffic volume on SR-126 and increase the risk to wildlife attempting to cross the roadway. Depending on the final Project design, build-out of the Project area includes the construction of up to three new roads that will connect to SR-126: Potrero Canyon Road/Valencia Boulevard, Long Canyon Road, and Commerce Center Drive. Magic Mountain Parkway would connect to Potrero Canyon Road/Valencia Boulevard in the southeastern portion of the Project area. For the most part, these connecting roads will be constructed within development areas and have very little direct contact with open space, and thus relatively little risk of vehicle collisions with wildlife.

Altered Hydrology. Increased urban and stormwater runoff due to the increase in impervious surfaces from build-out of the Project area may result in long-term hydrological alterations, including increased runoff volume, increased peak flow rates, increased duration of flows, and altered patterns in streams and rivers. Groundwater levels may be affected as a result of interference with groundwater recharge that could cause a deficit in aquifer volumes or lowering of the local groundwater table. These hydrological alterations may affect adjacent and downstream aquatic and riparian vegetation and wildlife habitat for many species, including aquatic and semi-aquatic species and riparian birds. For example, excessive and/or perennial runoff could increase downstream ponding, converting riparian communities to marsh, and, thus, altering species' communities. Water thermal regimes may also be altered and potentially exclude species with narrow thermal tolerances.

It should be noted, however, that flood control facilities would be designed pursuant to adopted Best Management Practices (BMPs) and NPDES permitting requirements. The Newhall Ranch Subregional Stormwater Mitigation Plan prescribes the post-development stormwater management facilities to treat or detain runoff to ensure compliance with the Basin Plan and other policies, such as hydromodification. Further, drainage structures

would focus on managing the amount of debris that would enter the drainage system, balancing the amount of sedimentation or erosion that would occur, and maintaining the quality of water in the drainage system at a level consistent with the Clean Water Act and Porter-Cologne.

Watershed-Level Water Quality Impacts. Watershed-level water quality impacts may occur as a result of runoff from development areas and roadways. Potential pollutants include fertilizers (containing nutrients such as nitrogen and phosphorus), pesticides, herbicides, estrogenic chemicals, and petroleum products (fuel, oil, and lubricants). These water quality impacts are of particular concern in the Santa Clara River, which provides aquatic, riparian, and terrestrial habitats for many species, including federally and state-listed endangered and threatened species such as the least Bell's vireo (*Vireo bellii pusillus*) and the unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). Amphibians are susceptible to changes or degradation of water quality because of integument (skin) permeability. There is clear evidence that chemical contamination such as pesticides and herbicides can affect amphibian development, reproduction, and survival (*e.g.*, Hayes *et al.* 2003; Bridges and Semlitsch 2000). Increased nutrients, such as nitrogen and phosphorus, can cause eutrophication effects, such as algae blooms that deplete oxygen concentration and degrade habitat for aquatic, semi-aquatic species, and riparian species, including vegetation structure and prey composition and abundance.

Air Pollution. Air pollution in the Project area will increase as a result of the increased population, vehicles, *etc.* One effect of air pollution is increased nitrogen deposition (N-deposition), which, in turn, facilitates the growth of non-native plants species and degrades habitat for native plant and wildlife species. N-deposition is recognized as a statewide phenomenon in California. Sources of nitrogenous air pollutants include transportation, agriculture, industry, electricity generation, wildfire, and emissions from natural and semi-natural ecosystems (Weiss 1999). Future development in the Project area will likely increase local sources of nitrogenous air pollutants, primarily due to transportation and demand for electricity generation. The major documented impact on of N-deposition in California is an increase of invasive annual grasses in low-biomass ecosystems. Coastal scrub is one of seven California ecosystems known to be susceptible to N-deposition. In coastal scrub communities, N-deposition has been identified as one of the main drivers of the conversion of shrublands to grasslands by the invasion of annual grasses (Allen *et al.* 1998; Cione *et al.* 2002; Padgett and Allen 1999). Increased abundance of non-native plants and invasive annual grasses, in particular, represents a potentially significant impact to native vegetation communities and wildlife habitat.

Increased Human Activity. Increased human activity in open space areas associated with the RMDP and build-out of the Project area will include permitted recreational use of trails by humans and their pets, and potential unauthorized impacts, including trespass, vandalism, illegal shooting and hunting, motorized and non-motorized off-road vehicles, trampling of vegetation, soil compaction, and trash dumping. These unauthorized activities would cause secondary impacts to vegetation communities, wildlife habitats, and wildlife species, including trampling of vegetation, creation of unauthorized trails, increased human presence around, and potential harassment of or harm to, wildlife (*e.g.*, causing abandonment of nest sites, collection of animals, crushing by bicycles and motorized off-road vehicles), potential harassment of or harm to wildlife by pets, contact with pet fecal material and potential for transmission of diseases and parasites, and trash and debris.

Increased Mesopredators. Habitat fragmentation and isolation is associated with increases in urban-adapted mesopredators, such as the raccoon, skunk, opossum, and fox in small habitat fragments where top predators, such as coyotes, are not present (*i.e.*, the "mesopredator release" effect) (Crooks and Soulé 1999). Non-native mesopredators also may include stray and feral cats and dogs that can have the same effects as native mesopredators. These species can outcompete smaller native species for available resources, and increase predation rates, thus reducing the distribution and populations of vulnerable native species (Crooks and Soulé 1999). The increase in mesopredators in fragmented habitats is often considered an edge effect, but because some of these species can penetrate long distances in natural habitats in the absence of top predators, resulting in landscape-level effects.

Increased Invasive Plants. According to Invasive Plants of California's Wildlands (Bossard *et al.* 2000), non-native invasive plant species can alter ecosystem processes, such as nutrient cycling, hydrological cycles, and frequencies of wildfires, erosion and sediment deposition. Invasive plants interfere in ecosystem functions by outcompeting and displacing native plants and animals, by providing refuge for non-native animals, and by hybridizing with native species (Bossard *et al.* 2000). Several organizations, such as the California Native Plant Society (CNPS) and the California Invasive Plant Council (Cal-IPC) (formerly known as the California Exotic Pest Plant Council (Cal EPPC)), have provided detailed documentation regarding invasive plant species that threaten California's native flora and fauna.

Invasive plant species, and especially upland species, are often treated as an edge effect because they generally colonize modified or otherwise disturbed zones between development and natural open space areas. However, invasive species can colonize virtually any upland natural area that is subject to some kind of disturbance, such as road

shoulders, cleared zones along railroad lines, clearing along utility easements, excessive fire, fire breaks, and grazing. The air pollution discussion above also demonstrates that N-deposition favors non-native annual grasses over low-biomass ecosystems, such as coastal scrub. Many species, like black mustard (*Brassica nigra*) and non-native annual grasses of Mediterranean origin (*e.g.*, *Bromus* spp., *Hordeum* spp., and *Avena* spp.), have become naturalized to the point that they are beyond realistic control measures at a landscape level. Currently, the main risk to upland areas by these species is the high frequency of fires in the region that could result in permanent transitions of coastal scrub and chaparral to annual grassland.

Riparian and wetland systems are also extremely vulnerable to invasive plants such as giant reed, tamarisk, and pampas grass (*Cortaderia* sp.) because of the highly effective transport of these along rivers and streams. These species can dominate the biomass of riparian and wetlands communities where they become established, virtually choking out the native vegetation. Giant reed is perhaps the most pernicious invasive species in river systems in southern California. The stems of giant reed root at the nodes along the stalk and can span of up to 40 feet in diameter allowing the species to grow as much as 10 inches a day (Bossard *et al.* 2000). This growth rate produces a large amount of aboveground biomass that can quickly monopolize local resources and restrict native species. Effects on native environments by giant reed include exclusion of riparian species and subsequent reduction in wildlife habitat and species diversity. Giant reed also reduces soil moisture through evapotranspiration rates three times that of native riparian species, converts channel morphology through trapping large amounts of sediment, and increases water temperature by providing little shade (Jackson 1998). Furthermore, giant reed has a shallow rooting system that is often uprooted by large precipitation events causing increased erosion. Finally, the massive amounts of biomass associated with giant reed are increasing fire frequency and intensity in riparian systems, which, in turn, facilitate the process of conversion to monocultural stands of giant reed (Jackson 1998). The main risk areas for invasive riparian and wetland species are the Santa Clara River corridor and Salt Creek, which will remain undeveloped.

Increased Invasive Aquatic and Semi-Aquatic Species. Invasive aquatic and semi-aquatic species known to occur, or having the potential to occur, in the Santa Clara River and other wetland and riparian areas include bullfrog (*Rana catesbeiana*), African clawed frog (*Xenopus laevis*), and crayfish (*Cambarus clarkii*) as well as non-native fishes, such as mosquito fish (*Gambusia affinis*) and largemouth bass (*Micropterus psalmodies*) (ENTRIX 2009). Several amphibian declines in the western United States have been associated with introduced aquatic predators (Doubledee *et al.* 2003). For example, experiments, field studies, and observations have found California red-legged

frog abundance to be negatively correlated with the presence of bullfrogs (Doubledee *et al.* 2003).

Alterations of the hydrology and thermal regimes in the Santa Clara River could favor establishment of mosquitofish and largemouth bass. For example, ENTRIX, Inc. (2009) found that mosquitofish were relatively rare in the Santa Clara River, except schools where schools of mosquito fish were collected in watercress-choked habitats in the downstream side of the Humble Crossing located downstream of Castaic Creek. ENTRIX, Inc. (2009) also found that road crossings of the River with several broad lateral backwaters (sometimes spring fed) appeared to provide good unarmored threespine stickleback habitat; however, no stickleback were found. ENTRIX, Inc. (2009) suggests that such marginal pools are also potentially preferred by, and encourage, exotic species like largemouth bass, African clawed frogs, green sunfish (*Lepomis cyanellus*), and mosquitofish.

Utility Transmission Lines. Powerlines, transmission towers, and utility poles can cause entanglements and electrocution of large birds, such as the California condor (*Gymnogyps californianus*), the golden eagle (*Aquila chrysaetos*), and other raptors (Lehman *et al.* 2007; Franson *et al.* 1995). Other potential secondary impacts associated with maintenance and repair of utility transmission lines were discussed above in relation to long-term RMDP secondary effects, including hydrologic and water quality alterations, erosion, chemical and toxic compounds pollution, dust, noise, vibration, lighting, increased human activity, temporary fencing, accidental clearing, trampling, grading, oak tree root impacts, and trash and other debris.

Microtrash. Microtrash, such as glass, bottle caps, wires, and screws, that may be ingested by young California condors is expected to increase with increases in the population resulting from build-out of the Project area.

Increased Risk of Disease. The increased human and associated pet population can increase of the risk of disease transmission to native wildlife in the Project area. For example, free-ranging domestic cats and dogs can transmit new diseases to wild animals. Mountain lions and other native wildlife, such as the raccoon, skunk, and fox, may be at risk to a variety of diseases from domestic cats, including feline immunodeficiency virus, feline leukemia virus, feline infectious peritonitis, feline and canine distemper, panleukopenia, and rabies (Foley 1996; Florida Fish and Wildlife Conservation Commission 2003).

The increased prevalence of non-native amphibians, such as the African clawed frog, which occurs in the Project area, increases the risk of disease transmission to native amphibians. Based on epidemiological evidence, the African clawed frog has been

proposed as the origin of spread of the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*), which infects amphibians with the disease chytridiomycosis that is considered one of the main causes of amphibian die-offs worldwide (Weldon *et al.* 2004; Lefcort and Blaustein 1995). The African clawed frog was an international trade species beginning in the mid-1930s, and prior to that time, the amphibian chytrid fungus appeared to be limited to southern Africa (Weldon *et al.* 2004).

Diseases transmitted from humans and pets also may affect raptors, such as Cooper's hawk (*Accipiter cooperii*). Boal and Mannan (1999) found that mortality of nestling Cooper's hawks in urban settings primarily was from trichomoniasis, which is caused by the parasitic protozoan *Trichomonas gallinae* that occurs in the digestive and urogenital tracts of many animals and humans. This parasite causes lesions in the mouth, throat, and crop of birds and prevents infected individuals from eating. An important vector of trichomoniasis in urban areas may be domestic pigeons (*Columba livia*) and potentially wild doves (Columbidae), which are preyed upon by hawks and falcons. Stabler (1941) found that of 242 pigeons originating from Pennsylvania, Maryland, and New Jersey, 64.5% were infected with *Trichomonas gallinae*.

Some plant communities may be more vulnerable to diseases in urban settings. For example, overwatering resulting from urban runoff and summer irrigation or very wet precipitation cycles (or some combination of the two) can make oaks (*Quercus* spp.) more susceptible to various oak root diseases resulting from water mold fungi such as *Phytophthora* (Raabe 1990). The pathogen (*Phytophthora ramorum*) also infects the leaves and twigs of common ornamental nursery plants, such as rhododendrons and camellias, which serve as vectors for pathogen dispersal (COMTF 2008). Surveys in 2004 in southern California counties, including Los Angeles County, failed to detect this pathogen however, and the current documented southern extent of this pathogen is Monterey County (COMTF 2008). The risk of this pathogen spreading to southern California counties currently is considered to be low (COMTF 2008).

Open Space–Urban Interface Secondary Impacts. Secondary impacts under Alternatives 2 through 7 along the open space–urban interface, also called "edge" effects, are foreseeable impacts resulting from development and increased human populations that can result in chronic habitat degradation and decline or loss of species along the boundaries of open space areas. Similar to habitat fragmentation and isolation, edge effects reduce the effective total habitat area preserved in open space, which, in turn reduces effective population sizes of plant and wildlife species and increases the risk of local population extinctions. The sources and mechanisms of many of the edge effects discussed below are the same as described above for short-term construction-related impacts, but may have long-term chronic impacts rather than temporary impacts, and

thus, may permanently affect habitat conditions and species distributions at the boundary area between open space and development.

Increased Noise. Chronic increases in noise related to development primarily result from increased traffic volumes at all hours. Other sources of development-related increases in noise that may affect native wildlife include operation of landscape maintenance equipment and tools (*e.g.*, mowers, blowers, trimmers, wood chippers), active recreation at parks (particularly at night), loud music from vehicles and residences, and on-site heavy equipment and machinery use by commercial and industrial businesses.

Some of these noise sources, such as traffic noise, are relatively constant (although with daily cycles related to peak traffic periods), and some wildlife species may habituate and adapt to the chronic ambient noise levels, while others may avoid noisy areas. Other noise sources are more occasional or discrete and are more likely to startle wildlife and at least temporarily disrupt their behavior at the time. As described above for construction activities, noise may affect wildlife in several ways that disrupts both their behavior and physiology in complex and interactive ways, including startling or annoying, raising stress levels, interrupting sleep and rest, interfering with acoustic communications, interfering with prey detection, and in the case of loud abrupt noises, causing permanent injury to the auditory system (Dooling 2006; Barrass and Cohn 1984; Brattstrom and Bondello 1983).

Lighting. As reviewed above, ecological light pollution can have effects at the behavioral and population ecology level, the community ecology level, and the ecosystem level (Longcore and Rich 2004). These effects generally include orientation/disorientation and attraction/repulsion, reproduction, and communication at the behavioral and population ecology level, and competition and predation at the community ecology level, the effects of which would be expected to reverberate to the ecosystem level (Longcore and Rich 2004).

Ecological light pollution associated with build-out of the Project area generally would be chronic as a result of increased ambient light and direct glare from sky glare, lighted buildings, streetlights, and security lights. Lighting from vehicles will be both chronic and unexpected.

Pet, Stray, and Feral Animals. Development of the Project area will increase the number of pet cats and dogs, and increase the potential for stray and feral animals. Unconstrained pets at the interface between open space and residential development can have significant predation effects on native wildlife, including birds, rodents, reptiles, and amphibians (*e.g.*, Churcher and Lawton 1987; Kelly and Rotenberry 1993). Lost or abandoned pets may penetrate even further into open space areas in search of food or

refugia. Feral populations of dogs and cats are a particular problem because most of their food resources may be native prey.

Also, as noted above in the discussion of disease, domestic cats and dogs may be vectors for diseases that affect native wildlife, such as feline immunodeficiency virus, feline leukemia virus, feline infectious peritonitis, feline and canine distemper, panleukopenia, and rabies (Foley 1996; Florida Fish and Wildlife Conservation Commission 2003).

Microclimate Changes. Development may introduce microclimate changes at the open space–urban edge, such as alterations in wind, solar radiation and light exposure, and water that may have substantial effects on native vegetation and wildlife species (Saunders *et al.* 1991).

Increased wind exposure at the open space–urban interface may result in direct physical damage to vegetation (*e.g.*, windpruning and/or loosening of bark) or increase evapotranspiration, reduce humidity, and increase desiccation of plants that require adequate soil moisture for regeneration (Saunders *et al.* 1991). Increased wind also may increase dust levels and seed transport at edges, potentially interfering with photosynthesis and introducing non-native species (Saunders *et al.* 1991).

Alterations in solar radiation and light exposure can have numerous effects along edges. Daytime temperatures can be higher and nighttime temperatures lower than areas within intact natural vegetation patches, resulting in greater temperature ranges of the soil and increased chance of frost (Saunders *et al.* 1991). Soil nutrient cycling, soil moisture retention, invertebrate communities, and predator–prey relations at habitat edges also may be affected by altered soil temperatures (Saunders *et al.* 1991). Temperature alterations may also occur at the edge of aquatic habitats that exceed species' (*e.g.*, fish and amphibian) tolerances due to vegetation changes and sedimentation within streams.

Water alterations and related effects at habitat edges include change the rates of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, erosion, movement of salts, nutrients, pesticides, altered seedbed characteristics, and habitat alterations for ground-dwelling species (Saunders *et al.* 1991). Irrigation in fuel modifications zones, overspray from landscaped areas, and urban runoff may create edge areas with artificially high moisture, attracting invasive species such as Argentine ants (*Linepithema humile*) (Menke and Holway 2006). The Argentine ant has demonstrated negative impacts on native wildlife, such as coast horned lizard (*Phrynosoma coronatum*), which predominantly feeds on native harvester ants that are displaced by Argentine ants (Suarez and Case 2002), and may affect seed dispersers and pollinators of native plants due to its impact on the native invertebrate community.

All of these microclimate effects have the potential to alter habitats and microhabitats for a variety of native plant and wildlife species along the open space–urban interface.

Invasive Plant Species. Invasive plant species that thrive in edge habitats are a well-documented problem along the open space–urban interface in southern California, as well as throughout the United States. The California Invasive Plant Council (Cal-IPC 2008) lists several adverse effects of non-native species in natural open space areas: non-native plants degrade wildlife habitat value (*e.g.*, by forming monocultures that displace native communities that provide food and shelter for native wildlife) and are considered to be the greatest threat to threatened and endangered species after habitat destruction; certain invasive plants can increase fuel loads compared to native plants and facilitate more frequent and catastrophic fires; and some invasive plants (*e.g.*, giant reed and tamarisk) consume enormous amounts of water that is lost to native plants and wildlife.

The Project area already supports a number of non-native species, such as annual grasses (*Bromus* spp., *Avena* spp.), Mediterranean mustard (*Hirschfeldia incana*), black mustard, tocalote (*Centaurea melitensis*), and Russian thistle (*Salsola tragus*) at a landscape level as a result of historic disturbances such as grazing, oils and natural gas production, agricultural operations, and increasingly frequent wildfires. These species have essentially become naturalized and large-scale control or eradication is not feasible. However, development has the potential to increase the spread of these species due to widespread surface soil alterations, especially along roadsides and in fuel modification zones. Mustards, for example, are common invasive species that can quickly invade disturbed areas adjacent to development and along roadsides. Development also has the potential to increase non-native invasive species used in landscaping, such as pampas grass.

Wildlife Community Alterations. Wildlife community alterations may occur along the open space–urban interface due to development-induced habitat degradation. One well-documented effect is an increase in brown-headed cowbirds (*Molothrus ater*), which parasitize the nests of several native birds, including least Bell's vireo (*e.g.*, Sharp and Kus 2006). Rottenborn (1999), for example, characterized wildlife species as being "tolerant" or "sensitive" to urbanization. The "tolerant" species include several birds that are commonly thought of as urban-related, such as the rock dove (*Columbia livia*), the mourning dove (*Zenaida macroura*), the western scrub-jay (*Aphelocoma californica*), the American crow (*Corvus brachyrhynchos*), the northern mockingbird (*Mimus polyglottos*), and the bushtit (*Psaltriparus minimus*). Urban "sensitive" species included both year-long resident species, such as the California quail (*Callipepla californica*), the acorn woodpecker (*Melanerpes formicivorus*), the Bewick's wren (*Thryomanes bewickii*), and

the California thrasher (*Toxostoma redivivum*), as well as migrants, such as the willow flycatcher (*Empidonax traillii*) and the yellow warbler (*Dendroica petechia*). Permeability to invasive species such as the cowbird, or urban-tolerant species may be increased through reductions in plant structure and cover related to increased human activity in the area, and especially related to fuel modification activities along habitat edges. These species may outcompete resident native species for resources (*e.g.*, habitat, food, nesting locations) or directly prey on or parasitize the native residents. European starlings (*Sturnus vulgaris*), for example, may directly compete with native cavity nesters for nest sites in urban settings.

Longcore (2003) documented adverse edge effects within fuel modification thinning zones in coastal sage scrub, including the loss of arthropod diversity and increases in exotic species, such as Argentine ants, European earwigs (*Forficula auricularia*), pillbugs (*Armadillidium vulgare*), sowbugs (*Porcellio* sp.), and sowbug killers (*Dysdera crocata*), which, in turn, negatively affect predator species, such as the coast horned lizard and arachnids, such as scorpions and trap-door spiders.

Trampling of Vegetation and Compaction of Soils. Increases in human activity along the open space–urban interface may result in trampling of vegetation and compaction of soils, affecting the viability of plant communities, wildlife habitat quality, and species that are sensitive to habitat structure, such as shrub and herbaceous vegetation integrity, soil friability, and burrowing substrate quality (*e.g.*, rodents, reptiles, amphibians, and invertebrates). Trampling of vegetation and compaction of soils probably also interacts with the microclimate/microhabitat alterations discussed above, and especially water alterations and related effects at habitat edges such as changes in the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion.

Pesticides, Fertilizers, Fungicides, Herbicides, and Rodenticides. Pesticides, fertilizers, fungicides, herbicides, and rodenticides may directly affect vegetation communities and habitat quality, be directly toxic to species, indirectly toxic through prey vectors, or reduce prey abundance. These substances may penetrate the open space–urban interface through urban runoff from residential and commercial landscape areas and golf courses, overspray, wind, direct applications in interface areas, soil penetration, and wildlife vectors.

Pesticides, for example, can act in several ways. The original pesticide can be toxic, its decomposed elements can be even more toxic, and it can "bio-accumulate," whereby the contaminant concentrates in each link of the food chain, and thus reaches high concentrations at each higher level of the food chain. DDT and other chlorinated

hydrocarbon pesticides have been used worldwide to control crop pests and disease-carrying insects since the 1940s. DDT was banned in the United States by the EPA in 1972 because of unacceptable risks to the environment and potential harm to human health (EPA 1972). Long-term ecological exposure and accumulation resulted in eggshell thinning and loss of young in many raptorial bird species, resulting in serious declines in reproductive success (Terres 1980; Henny and Wight 1972). Negative impacts on survival and reproductive success of burrowing owls (*Athene cunicularia*) may occur due to direct toxicity, and was observed when Carbofuran, a carbamate insecticide, was sprayed over nest burrows (County of Riverside 2008). Indirect mortality due to contaminated prey may also be significant, but this is unknown to date. The weights of breeding western burrowing owls (*A. c. hypugaea*) on pastures where strychnine-coated grain is used to control ground squirrels are significantly lower than on control pastures, suggesting a sublethal effect or less food available. Organochlorine residues were found in adult and juvenile western burrowing owls in Saskatchewan, but the effect on reproduction was not documented (County of Riverside 2008).

Fertilizers, as discussed above, can enter wetland and riparian systems and cause algae blooms and eutrophication. They also can enhance growth of non-native species in edge areas.

Rodenticides may also affect wildlife in various ways. Rodenticides are directly toxic to rodents, but may also indirectly affect rodent predators, such as hawks and owls, coyotes, snakes, *etc.* either through loss or contamination of prey. Eradication of rodents also can affect habitat quality for other species, such as burrowing owls that use ground squirrel burrows and many species of reptiles, amphibians, and insects that use rodent burrow as refugia, aestivation, and hibernation.

Human Collection and Harassment of Native Species. Increased human populations increase the risk of collection of certain species for the pet trade (*e.g.*, rare snakes, such as the rosy boa (*Charina trivirgata*) and the coast horned lizard) or incidentally by children (*e.g.*, slow-moving, non-aggressive snakes, the coast horned lizard, and the southwestern pond turtle as well as most frogs and toads) because of easier access to open space areas. Commercial collecting of the coast horned lizard was banned in 1981, but, prior to this time, the lizard was extensively exploited by the pet and curio trade (Nafis 2008). Similarly, the rosy boa has increased in its popularity in the pet trade (Fisher 2003).

4.5.5.2 Impacts to Vegetation Communities, Land Covers, Unique Landscape Features, and Wildlife, Including Impact Analysis for Alternative 1 (No Action/No Project)

4.5.5.2.1 Summary Descriptions of the EIS/EIR Alternatives

In general, the six alternatives other than the No Action/No Project alternative were designed in an attempt to provide a gradation in the levels of environmental impacts that would result from the Project. Specifically, alternatives were designed to provide a broad range of options for avoiding impacts to jurisdictional waters and impacts to the San Fernando Valley spineflower. As impacts to jurisdictional waters would be primarily associated with the construction of bridges and the grading and realigning of drainages, alternative configurations for these facilities were evaluated in depth. Similarly, because the Project would potentially impact all San Fernando Valley spineflower areas not designated as spineflower preserves, a broad range of possible preserve designs were evaluated. The alternatives are generally designed to further reduce impacts when compared to the proposed Project (Alternative 2). For example, Alternative 3 modifies the proposed Spineflower Conservation Plan (SCP) by adding additional spineflower preserve acreage at the Airport Mesa and Entrada populations. The preserve design under Alternative 4 retains these additional acreages, and further adds spineflower preserve acreage at the Potrero Canyon and Grapevine Mesa populations. This subsection provides a brief narrative summary of the key features of each of the alternatives considered in this EIS/EIR in order to provide the context for the impact analyses that follow. **Table 4.5-23**, Key Components of Alternatives, provides a summary of the key components for each of the Project alternatives.

4.5.5.2.1.1 *Alternative 1 (No Action/No Project)*

- The proposed RMDP and SCP would not be approved, and the requested comprehensive state and federal authorizations would not be granted.
- No change in existing land use practices; oil and gas, grazing, and cultivated agriculture would continue on site.
- No preserves or natural open space set-asides would be dedicated.
- The previously approved Specific Plan and VCC developments would not go forward.
- The planned development within the Entrada planning area would not go forward.

The impact analysis for the effects of Alternative 1 (No Action/No Project) is provided below in **Subsection 4.5.5.2.2**, including for general vegetation communities and land covers; unique landscape features; special-status vegetation communities; general wildlife; special-status wildlife; wildlife habitat linkages, corridors, and crossings; and special-status plants. This analysis is presented in summary fashion in this section for special-status wildlife and plant

species in order to avoid repeating the same analysis for each of the 92 special-status species in **Subsection 4.5.5.3**.

Table 4.5-23
Key Components of Alternatives

Project Component	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Santa Clara River bridges	0	3 (Potrero Canyon Road, Long Canyon Road, Commerce Center Drive)	2 (No bridge at Potrero Canyon Road)	2 (No bridge at Potrero Canyon Road)	3, with a long span at Potrero Canyon Road	2 (No bridge at Commerce Center Drive)	1 (No bridge at Commerce Center Drive or Potrero Canyon Road)
Santa Clara River bank stabilization	None	Installed	Installed	Installed	Installed	Installed	Installed outside 100-year floodplain
Tributaries converted to storm drain	None	Minor drainages except for those in Humble and Ayers canyons	Minor drainages except for those in Humble and Ayers canyons	Minor drainages except for those in Humble and Ayers canyons	Minor drainages except for those in Humble and Ayers canyons	Minor drainages except for those in Humble, Ayers, and upper Middle canyons	Minor drainages except for those in Humble, Ayers, Magic Mountain, and Middle canyons
Tributaries realigned	None	Major tributaries, narrowest channels	Major tributaries, somewhat widened channels	Major tributaries, narrowest channels, lower Potrero canyon avoided	Major tributaries, Potrero, Chiquito, San Martinez Grande canyons greatly widened	Major tributaries, all channels greatly widened	None. Major tributaries preserved in place
Tributary road crossings	0 bridges 0 culverts	0 bridges 19 culverts	3 bridges 16 culverts	2 bridges 17 culverts	7 bridges 12 culverts	9 bridges 12 culverts	18 bridges 4 culverts
Spineflower preserve acres	0	167.5	221.2	259.4	338.4	891.9	659.2
Percent preservation of cumulative spineflower habitat	N/A	68.6%	76.6%	81.6%	83.3%	87.5%	96.9%
Dwelling units facilitated	0	22,610	21,558	21,864	21,155	20,212	17,323
Commercial and industrial total square feet facilitated	0	10,220	10,153	5,933	5,865	5,784	3,815

4.5.5.2.1.2 *Alternative 2 (Proposed Project)*

- The RMDP and SCP would be approved as proposed by the Project applicant and the requested comprehensive state and federal authorizations would be granted.
- Three major roadway bridges across the Santa Clara River would be authorized, including the Commerce Center Drive Bridge (previously approved by the Corps and CDFG in 1999),[1] the Potrero Canyon Road Bridge, and the Long Canyon Road Bridge.
- Major tributaries would be re-graded and realigned to facilitate and protect urban development.
- Nearly all minor tributaries would be graded and converted to buried storm drain systems.
- Five spineflower preserves would be established within the Specific Plan and Entrada planning areas, totaling 168 acres and preserving 68.6% of the cumulative habitat occupied by spineflower; no spineflower preservation would occur within the VCC planning area.
- This alternative would facilitate urban development, including 22,610 residential units and 10,220 thousand square feet of commercial and industrial floor space.

4.5.5.2.1.3 *Alternative 3 (Elimination of Potrero Canyon Road Bridge and Addition of Additional Spineflower Preserves)*

- The RMDP and SCP would be modified from those proposed by the Project applicant, and the requested comprehensive state and federal authorizations would be granted consistent with said modifications.
- Two major roadway bridges across the Santa Clara River would be authorized, including the Commerce Center Driver Bridge (previously approved by the Corps and CDFG in 1999) and the Long Canyon Road Bridge. The Potrero Canyon Road Bridge would not be constructed under this alternative.
- Although major tributaries would be re-graded and realigned under this alternative, the channels would be wider than those of the proposed Project (Alternative 2). The cismontane alkali marsh in lower Potrero Canyon would be avoided.
- Additional spineflower preserve acreage would be dedicated at the sites of the Airport Mesa and Entrada populations. Alternative 3 would provide a total of 222 acres of

[1] The Commerce Center Drive Bridge was previously analyzed in the Final EIS/EIR (CDFG and Corps 1998) prepared and approved by the Corps and CDFG in connection with the previously adopted NRMP.

spineflower preserves and would protect 77.2% of the cumulative habitat occupied by spineflower on site.

- This alternative would facilitate urban development within the Specific Plan, VCC, and Entrada planning areas, including 21,558 residential units and 10,153 thousand square feet of commercial and industrial floor space.

4.5.5.2.1.4 *Alternative 4 (Inclusion of VCC Preserve Area and Elimination of Potrero Canyon Road Bridge)*

- The RMDP and SCP would be modified from those proposed by the Project applicant, and the requested comprehensive state and federal authorizations would be granted consistent with said modifications.
- Two major roadway bridges across the Santa Clara River would be authorized, including the Commerce Center Driver Bridge (previously approved by the Corps and CDFG in 1999) and the Long Canyon Road Bridge. The Potrero Canyon Road Bridge would not be constructed under this alternative.
- Major tributaries would be re-graded and realigned under this alternative, but cismontane alkali marsh in lower Potrero Canyon would be avoided.
- Additional spineflower preserve acreage would be dedicated at the sites of the Airport Mesa, Potrero Canyon, Grapevine Mesa, and Entrada populations. A spineflower preserve would also be established within the VCC planning area. Alternative 4 would provide a total of 260 acres of spineflower preserves and would protect 82.2% of the cumulative habitat occupied by spineflower on site.
- This alternative would facilitate urban development within the Specific Plan and Entrada planning areas, including 21,864 residential units and 5,933 thousand square feet of commercial and industrial floor space. No development would be facilitated within the VCC planning area.

4.5.5.2.1.5 *Alternative 5 (Widened Tributary Channels)*

- The RMDP and SCP would be modified from those proposed by the Project applicant, and the requested comprehensive state and federal authorizations would be granted consistent with said modifications.
- Three major roadway bridges across the Santa Clara River would be authorized, including the Commerce Center Driver Bridge (previously approved by the Corps and CDFG in 1999), the Potrero Canyon Road Bridge, and the Long Canyon Road Bridge. The Potrero Canyon Road Bridge would have a longer span under this alternative than under the proposed Project (Alternative 2), and the northern abutment would be pulled back to lessen impacts to the Santa Clara River.

- Major tributaries would be re-graded and realigned under this alternative. This alternative would result in substantial impact reductions in the Chiquito Canyon, San Martinez Grande Canyon, and Potrero Canyon drainages compared to the proposed Project (Alternative 2).
- Additional spineflower preserve acreage would be dedicated at the sites of the Airport Mesa, Potrero Canyon, Grapevine Mesa, San Martinez Grande, and Entrada populations. A spineflower preserve would also be established within the VCC planning area. Alternative 5 would provide a total of 339 acres of spineflower preserves and would protect 84.0% of the cumulative habitat occupied by spineflower on site.
- This alternative would facilitate urban development within the Specific Plan and Entrada planning areas, including 21,155 residential units and 5,865 thousand square feet of commercial and industrial floor space. No development would be facilitated within the VCC planning area.

4.5.5.2.1.6 *Alternative 6 (Maximum Spineflower Expansion/Connectivity)*

- The RMDP and SCP would be modified from those proposed by the Project applicant, and the requested comprehensive state and federal authorizations would be granted consistent with said modifications.
- Two major roadway bridges across the Santa Clara River would be authorized, including the Potrero Canyon Road Bridge—with an extended span similar to that proposed under Alternative 5—and the Long Canyon Road Bridge. The previously approved Commerce Center Drive Bridge would not be constructed under this alternative.
- Major tributaries would be re-graded and realigned under this alternative. However, all realigned channels would be many times wider under this alternative than under the proposed Project (Alternative 2), and the majority of proposed road crossings along the channels would be bridges as opposed to culverts.
- This alternative would designate spineflower preserves at the sites of all six spineflower populations, but would designate one large preserve per population rather than several smaller preserves as proposed under the other alternatives. Alternative 6 would substantially increase spineflower preserve acreage on site and would provide a total of 891 acres of spineflower preserves, protecting 88.3% of the cumulative habitat occupied by spineflower on site.
- This alternative would facilitate urban development within the Specific Plan and Entrada planning areas, including 20,212 residential units and 5,784 thousand square feet of commercial and industrial floor space. No development would be facilitated within the VCC planning area.

4.5.5.2.1.7 *Alternative 7 (Avoidance of 100-Year Floodplains and Spineflower)*

- The RMDP and the SCP would be modified from those proposed by the Project applicant, and the requested comprehensive state and federal authorizations would be granted consistent with said modifications.
- Only one roadway bridge across the Santa Clara River would be authorized, located at Long Canyon Road. The Potrero Canyon Road Bridge and the previously approved Commerce Center Drive Bridge would not be constructed under this alternative. Bank stabilization along the River would be constructed outside the 100-year floodplain.
- Under this alternative, major tributaries would not be re-graded or realigned. Bank stabilization would be constructed to protect development but would be located outside the 100-year floodplains of these drainages. In addition, the Middle Canyon and Magic Mountain Canyon drainages, which are proposed for conversion to buried storm drains under the proposed Project (Alternative 2), would be preserved.
- Alternative 7 was designed to achieve maximal avoidance of cumulative habitat occupied by spineflower. This alternative would designate spineflower preserves with 300 feet of buffer areas surrounding all cumulative habitat occupied by spineflower. Alternative 7 would provide a total of 661 acres of spineflower preserves, protecting 98.2% of the cumulative habitat occupied by spineflower on site.
- This alternative would facilitate urban development within the Specific Plan and Entrada planning areas, including 17,323 residential units and 3,815 thousand square feet of commercial and industrial floor space. No development would be facilitated within the VCC planning area.

4.5.5.2.2 Comparative General Impacts of EIS/EIR Alternatives, Including Alternative 1 (No Action/No Project)

4.5.5.2.2.1 *Alternative 1 (No Action/No Project)*

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. No preserves or natural open space set-asides would be dedicated or managed. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. The long-term effects of Alternative 1 are that adverse anthropogenic (human-related) disturbances evident in the Project area would continue for the foreseeable future. As described in more detail in **Subsection 4.5.3.3**, Existing Conditions by Project Area, existing disturbances that result in habitat loss and degradation include road construction and maintenance, grazing lots, oil pad construction, and agricultural activities. Cattle grazing, in particular, has broad-ranging effects on habitat conditions, including direct impacts on native vegetation (including preventing

recovery of shrub communities from wildfires), erosion, and impaired water quality. During warm, dry periods cattle often congregate in riparian and wetland areas, causing additional localized damage to these areas. For example, in Middle and Potrero canyons, cattle are the dominant foragers in portions of the remaining riparian communities. Extensive grazing may also "powder out" soft soils that quickly become denuded of vegetation, reducing habitat quality and increasing erosion.

4.5.5.2.2.2 *Vegetation Communities and Land Covers*

Existing land uses are described in more detail below in relation to the five general vegetation community types and one man-made land cover type organized by the general physiognomic and physical locations and human-dominated cover types identified in the Project area and listed in **Table 4.5-17.**

Grass and Herb Dominated Communities. This category includes California annual grassland and purple needlegrass. Because only 0.6 acre of purple needlegrass was mapped on site, this discussion addresses the effect of existing land use practices on California annual grassland.

As a non-native community, California annual grassland generally is a consequence of past land use practices in the Project area that have disturbed the native vegetation communities, including cattle grazing and mechanical disturbances such as mowing, scraping, disking and spraying. Frequent, repetitive fire also results in type conversion to California annual grasslands as native shrub communities are less able to recover. Existing land use practices under Alternative 1, and especially grazing, would be expected to facilitate continued type conversion of native communities to California annual grassland and prevent or inhibit recovery of native shrub communities. However, cattle grazing, which disturbs soils and helps distribute non-native species, would also facilitate "disturbance" of California annual grassland by spreading weedy non-native species such as black mustard and tocalote that degrade habitat value for native forbs that can co-exist with non-native grasses (bromes and wild oats), as well as grassland wildlife species. Such areas become more disturbed or ruderal than California annual grassland and generally have less resource value for native plant and wildlife species. Dirt roads and other mechanical disturbances within California annual grassland related to agricultural and oil and gas production can also facilitate colonization of non-native weedy species. Irrigation and runoff from agricultural fields, including fertilizers, can also promote the growth and dispersal of non-native weedy species, especially along the interface between agriculture and California annual grassland.

Scrub and Chaparral. This category includes several general habitat types, including coastal scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, and *Eriodictyon* scrub. Most of the effects of existing land use practices on scrub and

chaparral are related to cattle grazing. Cattle wander through and browse on shrub vegetation, particularly in areas that have been previously disturbed by fire or occur on gentle slopes. This activity results in trampling of native vegetation and soils and facilitates type conversion to California annual grassland and weedy communities, as well as erosion. Dense, intact stands of scrub and chaparral in steep rugged terrain probably are not substantially affected by cattle.

Apart from direct habitat loss, agriculture and oil and gas production have fewer direct effects on scrub and chaparral, but may still have adverse edge effects. Irrigation and runoff, including fertilizers and other chemical pollutants, may affect scrub and chaparral vegetation along the interface between fields and native vegetation, resulting in potential decreased productivity of the native vegetation and increased non-native invasive species. Maintenance of oil and gas production facilities and access roads such as mechanical clearing and grading also facilitates colonization by non-native invasive species. Dust from disking, vehicles, movement of farm equipment, and other operations also may reduce the vigor and productivity of adjacent scrub and chaparral through effects on light and penetration as well as photosynthesis, respiration, transpiration; increased penetration of phytotoxic gaseous pollutants; and increased incidence of pests and diseases.

Broad Leafed Upland Tree Dominated. This category includes two general habitat types: oak woodland and forest and California walnut woodland and forest, of which oak woodlands comprise approximately 98%. Because walnut woodland and forest is such a small component of this category, this discussion is focused on oak woodland and forest. Similar to scrub and chaparral, most of the effects of existing land use practices on oak woodland and forest are related to cattle grazing. Woodland and forest areas accessible to cattle in the High Country SMA and Salt Creek area exhibit grazing pressure, with the understory of woodland areas dominated by non-native grasses such as wild oat, slender oat, and bromes. In oak/grass areas there appears to be low recruitment of oaks, possibly due to cattle foraging on and trampling seedlings and saplings and impacts on acorn viability. Oak seedlings may also have to compete for water and other soil nutrients with the non-native grasses associated with grazing. Under Alternative 1, cattle grazing would continue in the High Country SMA/Salt Creek area, whereas under Alternatives 2 through 7, grazing would be terminated, with exception of the long-term management of resources.

Apart from direct habitat loss, agriculture and oil and gas production have fewer direct effects on oak woodlands and forests, but may still have adverse edge effects. Irrigation and runoff, including fertilizers and other chemical pollutants, may affect oak woodlands. A variety of oak diseases and blights are associated with modified water regimes, especially from irrigation (Swiecki and Bernhardt 1996). Root rot can result from overwatering and oaks can also suffer from dewatering if groundwater is pumped out for

agriculture. Weakened oaks are also more vulnerable to bark beetles. Maintenance of oil and gas production facilities and access roads, including activities such as mechanical clearing and grading, also facilitates colonization by non-native invasive species that may compete for water and nutrients. Dust from disking, vehicles, movement of farm equipment, and other operations also may reduce the vigor and productivity of oaks, as noted above for scrub and chaparral.

Because existing land use practices, and associated adverse impacts, have been in place for many decades and because of the longevity of oak trees, it is expected that the extent and distribution of oak woodlands and forests in the Project would remain essentially the same for the foreseeable future under Alternative 1.

Bog and Marsh. This category includes three general types: cismontane alkali marsh, bulrush-cattail wetland, and coastal and valley freshwater marsh. The cismontane alkali marsh is the dominant of the three types, accounting for 85% of the total. It is located mainly in middle and lower Potrero Canyon and at the confluence of the East Fork and mainstem of Salt Creek. Cismontane alkali marsh on site has low vegetative diversity and appears to be tolerant of cattle grazing and other existing land use practices. Its extent and distribution on site would not be expected to substantially change under Alternative 1. Bulrush-cattail wetland only occurs in two small locations along lower Salt Creek. Because of its limited distribution and extent on site, it probably has relatively low resource value. It is currently subject to cattle grazing and congregating and its status on site would likely remain the same under Alternative 1. Freshwater marsh is limited to the lower to middle reach of Potrero Creek and is relatively intact and undisturbed. With existing land use practices, it is expected that the extent and status of freshwater marsh would remain the same under Alternative 1.

Riparian and Bottomland Habitat. This category includes a variety of riparian, scrub, and wetland types associated with the Santa Clara River, Castaic Creek, and tributaries (see **Table 4.5-17**). A number of these habitat types are also special-status vegetation communities and are discussed in more detail in **Subsection 4.5.3.4.4**. This discussion provides a broader analysis of the effects of Alternative on these habitat types.

The common disturbances resulting from existing land use practices for the riparian and bottomland habitats on site are cattle grazing within and agricultural operations adjacent to the Santa Clara River, creeks, and tributaries. Cattle grazing can substantially affect these habitat types, and particularly the riparian communities. Cattle, grazing and congregating in riparian habitat, result in damage to the riparian understory, which affects the vigor and productivity of the community and prevents or inhibits recruitment of important constituents such as willows and cottonwood trees. Damage to the horizontal and vertical structure of the habitat, as well as altering hydrology and impairing water

quality, can also facilitate colonization by non-native invasive plants and animals (such as brown-headed cowbirds) and reduces habitat quality for many native wildlife species such a nesting birds, amphibians and semi-aquatic reptiles such as southwestern pond turtle and two-striped garter snake. Damage to riparian habitat structure by cattle can also alter wind and solar exposures along the edges of the habitats, thus altering soil moisture, nutrient conditions, and species relationships in these edge areas. Cattle impacts to riparian-associated scrub habitats, such as arrow weed scrub, mulefat scrub, big sagebrush scrub, and Mexican elderberry scrub, as well as river wash, are probably less adverse, and these disturbance-maintained and early successional or seral habitats may in fact be partly maintained by cattle disturbance. Cattle impacts to riparian and bottomland habitats are most prevalent in the mainstem Salt Creek, the East Fork of Salt Creek, and in Potrero Creek.

Riparian and bottomland habitats are also highly vulnerable to edge effects from agricultural practices, primarily irrigation runoff including fertilizers and other chemical pollutants that can impair water quality and the vigor of plants, and can facilitate the dispersion and growth of non-native invasive species. Perennialized stream flows resulting from irrigation also may substantially alter the hydrology (*e.g.*, surface and subsurface flows, natural infiltration, and ground water) and geomorphology (coarse sediment transport and deposition) of riparian and bottomland systems that are adapted to seasonal ephemeral and intermittent flow patterns (timing and magnitude of peak flows). Perennialized flows may result in type conversion to habitats better adapted to wetter conditions, such as marshes, ponds, and backwater areas with emergent vegetation and algae blooms as opposed to more natural riparian systems such as southern willow scrub, southern cottonwood–willow riparian forest, and coast live oak riparian forest.

Dust from disking, vehicles, movement of farm equipment, and other operations also may reduce the vigor and productivity of riparian and bottomland habitats, as noted above for scrub and chaparral.

Under Alternative 1, these existing land use practices would continue for the foreseeable future. The native riparian and bottomland habitats would not be restored, enhanced, or managed, including removal of cattle (except for long-term resource management) as they would under Alternatives 2 through 7.

Man-Made Land Cover Types. This category includes agriculture, developed land, and disturbed land, which are the result of existing land use practices. These land uses would remain the same for the foreseeable future under Alternative 1. However, conversion of agriculture or disturbed land to development (for oil and gas production, for example) could reduce habitat value in these areas for some wildlife species such as foraging

raptors and other species that forage or nest in agricultural areas such as California horned lark.

4.5.5.2.2.3 *Unique Landscape Features*

River Corridor SMA. Under Alternative 1, the River Corridor SMA would continue to provide resident habitat for wildlife and function as a regional east-west wildlife habitat linkage and wildlife corridor. However, under Alternative 1, specific protection, restoration and enhancement, and management of the River Corridor SMA would not occur. Along with the existing benefit of the River Corridor SMA to the watershed and wildlife, the negative impacts of existing land use practices would continue. Agricultural operations immediately adjacent to the River corridor would continue and temporary road crossings and associated culverts would be constructed and used. The oxbows and lateral ponding that occur at these crossings provide potential habitat for native species such as southwestern pond turtle and unarmored threespine stickleback, but also provide habitat for exotic predators such as African clawed frog, largemouth bass, green sunfish, mosquitofish, and crayfish. These potential conditions would continue and monitoring and management of African clawed frogs and crayfish would not occur. Runoff from agricultural fields would continue, contributing to perennial high velocity flows in the River that are detrimental to the unarmored threespine stickleback.

Water quality and hydrology in the River Corridor SMA would be expected to generally remain the same under Alternative 1. Existing pollutant concentrations, for example, generally are higher compared to predicted levels for build-out of the Project area. **Section 4.4**, Water Quality, concluded that while total runoff ammonia, total nitrogen, trace metals, and chloride loads and dissolved copper concentration would be higher with build-out compared to existing conditions, concentrations of all modeled constituents (except for dissolved copper) would decrease when compared to existing conditions.

Concentrations of hydrocarbons and Methylene Blue Activated Substances (MBAS), which is related to the presence of detergents in runoff, and concentrations of pathogens, pesticides, trash and debris, and cyanide may increase with build-out compared to existing conditions.

High Country SMA and Salt Creek Area. Under Alternative 1, the High Country SMA and Salt Creek area would continue to provide wildlife habitat value and regional wildlife habitat connectivity function. However, specific protection, restoration and enhancement, and management, including removal of cattle grazing (except for long-term resource management), would not occur under Alternative 1. Therefore, an increase in wildlife habitat value resulting from riparian and oak woodland restoration and enhancement, for example, would not occur. The adverse effects of cattle grazing, including the trampling of native vegetation and soils, and facilitating colonization by

invasive species and type conversion of coastal scrub and chaparral to annual grassland would continue under Alternative 1.

Middle Canyon Spring. Under Alternative 1, the Middle Canyon Spring would remain intact, but would not be specifically protected, monitored, or managed.

4.5.5.2.2.4 *Special-Status Vegetation Communities*

Purple Needlegrass. Because there is only a very small area of purple needlegrass (less than 1.0 acre) in the High Country SMA, existing land use practices under Alternative 1 are not expected to substantially affect this special-status vegetation community on site.

California Walnut Woodland. California walnut woodland comprises approximately 27 acres, locally distributed on the south-facing slopes in the Salt Creek area and in the southern portion of the High Country SMA. The existing land use practice most likely to affect this community is cattle grazing, which can result in browsing of seedlings and saplings and trampling of soils, and facilitate invasion by non-native grasses and weeds. Non-native species may affect walnut seed bank characteristics and seedlings by competing for moisture and nutrients. Under Alternative 1, areas supporting California walnut woodland would not be protected, restored and enhanced, or managed, including removal of cattle grazing (except for long-term resource management).

Valley Oak Woodland and Valley Oak/Grass. Valley oak woodland and valley oak/grass on site comprise approximately 541 acres. Valley oak woodland occurs in relatively small patches in the southern portions of Salt Creek, the High Country SMA, and the East Fork of Salt Creek and in other smaller, scattered patches in the Windy Gap area and along the Santa Clara River north of Airport Mesa. Much larger patches of valley oak/grass occur on site in the southern portion of the Salt Creek area and High Country SMA, as well as smaller patches between the East Fork of Salt Creek and Potrero Canyon and the Magic Mountain Canyon area. The existing land use practice most likely to affect these communities is cattle grazing, which can result in browsing of seedlings and saplings and trampling of acorns and soils, and facilitate invasion by non-native grasses and weeds. Non-native species may affect oak seedlings by competing for moisture and nutrients. Under Alternative 1, areas supporting valley oak woodland and valley oak/grass would not be protected, restored and enhanced, or managed, including removal of cattle grazing (except for long-term resource management).

Herbaceous Wetlands. Special-status herbaceous wetlands on site include bulrush-cattail wetland, cismontane alkali marsh, coastal and valley freshwater marsh, herbaceous wetland, and river wash.

Bulrush-cattail wetland only occurs in two small locations along lower Salt Creek. Because of its limited distribution and extent on site, it probably has relatively low resource value. It is currently subject to cattle grazing and congregating, and its status on site would likely remain the same under Alternative 1.

Cismontane alkali marsh is located mainly in middle and lower Potrero Canyon and at the confluence of the East Fork and mainstem of Salt Creek. Cismontane alkali marsh on site has low vegetative diversity and appears to be tolerant of cattle grazing and other existing land use practices. Its extent and distribution on site would not be expected to substantially change under Alternative 1.

Freshwater marsh is limited to the lower to middle reach of Potrero Creek and is relatively intact and undisturbed. With existing land use practices, it is expected that the extent and status of freshwater marsh would remain the same under Alternative 1.

Herbaceous wetland on site appears to be an early seral form of riparian vegetation where past flooding (particularly during the winter of 2004/2005) has severely altered the bed of the Santa Clara River by scouring and deposition. It also appears to be highly susceptible to non-native riparian species such as giant reed and tamarisk. Under Alternative 1, these conditions would continue because the Santa Clara River corridor would not be specifically protected and restoration and enhancement, and management would not occur.

River wash is common in the Santa Clara River. It is a naturally dynamic habitat with unvegetated and sparsely vegetated areas that are subject to scouring by typical seasonal storm flows and major resetting events. However, river wash has also probably become more prevalent in the River in the recent past due to alterations of upstream flows, which exacerbate conditions. Under Alternative 1, existing conditions, including perennial flows in the River, would continue, likely maintaining or increasing the amount of the river wash in the Santa Clara River system.

Riparian Scrub. Special-status riparian scrub on site includes alluvial scrub, arrow weed scrub, big sagebrush scrub, giant reed, Mexican elderberry, mulefat scrub, southern willow scrub, and shrub tamarisk.

Alluvial scrub and big sagebrush scrub are similar in that both occur in alluvial areas along washes and are more tolerant to xeric conditions than other riparian scrubs and include a mixture of wetland species and transitional sage scrub species where alluvial processes and other disturbance factors affect the pattern of vegetation. Cattle grazing is probably the main existing land use practice that affects these two communities where they occur in tributaries to the Santa Clara River, such as the East Fork of Salt Creek,

resulting in trampling of vegetation and soils, and facilitation of invasive non-native species.

Arrow weed scrub and mulefat scrub are also similar in that both are disturbance-maintained or seral communities. Cattle grazing probably affects both communities through trampling and soils disturbances and facilitation of invasive non-native species such as horehound and short-podded mustard, tocalote, and tree tobacco.

Mexican elderberry scrub occurs in several small patches on site, including upper and lower Salt Creek, tributaries to the East Fork of Salt Creek, between middle Potrero Canyon and the East Fork of Salt Creek, lower Homestead Canyon, San Martinez Grande Canyon, south and west of middle Long Canyon, and along Middle Canyon. Overall, this community is relatively intact and undisturbed on site, although a small area was mapped as disturbed west of Long Canyon. Under Alternative 1, this community would be expected to remain essentially the same as existing conditions. However, continued cattle grazing in this community may facilitate the invasion of non-native species such as nettle-leaved goosefoot, horehound, milk thistle, Italian thistle, short-podded mustard, and tree tobacco.

Southern willow scrub is fairly common on site, with occurrences along the Santa Clara River, upper and lower Potrero Creek, upper and lower Salt Creek, and the East Fork of Salt Creek. This community is successional and is intact and relatively undisturbed on site, except for the stands in Potrero Creek, which have experienced greater disturbance associated with grazing activities. Grazing (including cattle congregating and resting in riparian zones), which would continue under Alternative 1, disturbs the understory and structure of southern willow scrub, facilitating invasion by non-native species on site such as yellow sweet-clover, white sweet-clover, tumble mustard, hedge mustard, milk thistle, tamarisk, short-podded mustard, and cheeseweed, reducing it value as nesting habitat for species such as the least Bell's vireo and other riparian bird species. Cattle grazing and congregating in southern willow scrub also impairs water quality. Agricultural operations adjacent to the River Corridor SMA also would continue and potential edge effects from these operations; such as irrigation runoff, including fertilizers, and dust from disking and vehicles; could affect the vigor and vitality of southern willow scrub. Fertilizers may facilitate the distribution and growth of weedy species at the edges of this community. Under Alternative 1, specific protection, restoration and enhancement, and management, including removal of cattle (except for long-term resource management) of southern willow scrub would not occur.

Giant reed and shrub tamarisk are both non-native invasive species in riparian and wetlands systems. Large stands of giant reed occur along flood-scoured portions of the main channel of the Santa Clara River, as well as in occasional smaller clumps that were

too small to be mapped as a separate vegetation community. Tamarisk occurs in small, fairly monotypic patches at the lower end of Salt Creek, in middle and lower Potrero Canyon, in Castaic Creek near the confluence with Santa Clara River, and just upstream of this confluence in the River. Under Alternative 1, restoration, enhancement, and management of the riparian system, including removal and control of giant reed and tamarisk, would not occur.

Riparian Forest and Woodland. Special-status riparian forest and woodland on site includes southern coast live oak riparian forest and southern cottonwood–willow riparian. Southern coast live oak riparian forest only occurs in a small patch (less than 1 acre) at the confluence of Ayers Canyon and the Santa Clara River. Southern cottonwood–willow riparian forest comprises approximately 358 acres, primarily occurring in dense swaths along the main channel of the Santa Clara River and in Castaic Creek, in the portion of the floodplain beyond the effects of flood scour. Small reaches and/or patches of southern cottonwood–willow riparian also occur in upper Chiquito Canyon, upper Mid-Martinez Canyon, Potrero Canyon, and lower Middle Canyon. This community is relatively intact and undisturbed in the Santa Clara River, but the edges of the community are susceptible to exotic invasive species, such as giant reed and tamarisk. Edge areas that have undergone scouring or sedimentation disturbance have a much higher susceptibility to invasive colonization, primarily by giant reed. This type of disturbance also creates colonization sites for the slow-growing tamarisk, but to a more limited degree. Under Alternative 1, no specific protection, restoration and enhancement of southern coast live oak riparian forest and southern cottonwood–willow riparian would occur in the River Corridor SMA. Agricultural operations adjacent to the River Corridor SMA would continue and potential edge effects from these operations such as irrigation runoff, including fertilizers, and dust from disking and vehicles could affect the vigor and vitality of these communities. Fertilizers may facilitate the distribution and growth of weedy species at the edges of these communities. Grazing would continue in tributaries to the Santa Clara River that support southern cottonwood–willow riparian forest, disrupting the understory of this community by trampling vegetation and soils, facilitating invasion by non-native species, and impairing water quality.

4.5.5.2.2.5 *Common Wildlife*

Although the Project area still supports a rich and diverse wildlife community, indicating that existing land use practices have been generally compatible with maintaining the wildlife community, these land use practices also likely have had a negative impact on many species that occupy and use the area. These potential impacts are described by wildlife taxonomic groups below.

Birds. Birds are particularly sensitive to habitat degradation and other anthropogenic disturbances. Riparian and shrubland (coastal scrub and chaparral) birds likely are the most affected groups due to habitat loss and degradation from existing land uses. Even if vegetation communities generally remain, the disturbance of their horizontal and vertical structure and strata can significantly degrade their value as nesting and foraging habitat. Reducing the functional width of riparian habitat, for example, increases adverse edge effects such as invasion by exotic species and predation, as well as altering wind and solar exposures. Cattle grazing damages important riparian nesting and foraging habitat and may attract brown-headed cowbirds that parasitize nests of native passerine species, including least Bell's vireo and southwestern willow flycatcher. Agriculture adjacent to the Santa Clara River may reduce upland foraging areas for some riparian species such as least Bell's vireo that uses adjacent upland habitats for foraging in the latter part of the breeding season. Pesticides used on agricultural crops may reduce insect prey availability and/or cause secondary poisoning as a result of foraging on contaminated food items, including insects, forbs, and seeds. Some species also may suffer reproductive impairment or failure from pesticides. Human activities associated with agriculture and oils and gas production also may attract predators and competitors of less common nesting species, such as common ravens, American crow, European starling, as well as mesopredators such as raccoons, opossum, and striped skunk.

The ongoing impact of existing land use practices on raptors is probably mixed. Riparian and woodland nesting species such as Cooper's hawk, white-tailed kite, and long-eared owl likely have been negatively affected by existing practices because of degradation of nesting habitat and potential disturbances of nest sites due to human activity. The long-eared owl in particular is sensitive to human activities (Bloom 1994). On the other hand, raptors that forage in open areas, such as turkey vulture, red-tailed hawk, merlin, prairie falcon, and ferruginous hawk probably benefit from existing land uses (especially agriculture) because suitable foraging habitat conditions are maintained and prey that are often associated with human activities, such as California ground squirrels, cottontail rabbits, and pocket gophers, are plentiful and easily captured. However, intensive or monoculture agriculture, such as row crops, is less suitable for raptors because of a relative lack of prey using these areas. In addition, pesticides (*e.g.*, rodenticides, insecticides) may be harmful to raptors due to a reduced abundance of prey and/or secondary poisoning.

Insects. Although the overall Project area still supports a high number and diversity of insects associated with the large variety of habitats on site, agricultural areas disked and treated with pesticides have lower a abundance and diversity of insects compared to riparian, woodland, grassland, and shrublands. Cattle grazing, which causes general habitat degradation and loss of vegetative diversity, also likely reduces the abundance and diversity of insects. Insects that forage or reproduce in vegetation browsed by cattle

would be directly affected. Ground-dwelling insects, including many beetles, ants and spiders, likely are directly impacted by cattle grazing as a result of trampling of individuals and their nests and refuge areas. The loss and reduction of insects in disturbed areas also has an effect on vertebrate species that prey on these insects, including amphibians, reptiles, and small mammals, including bats.

Fish. The Santa Clara River supports a variety of fish, including arroyo chub, Santa Ana sucker, and unarmored threespine stickleback. Existing agricultural operations bordering the Santa Clara River and agriculture and cattle grazing in tributaries and associated side canyons likely have had an effect on habitat quality in the River for the native fish species, but the effect is complex and probably is both positive and negative. For example, ENTRIX (2009) identified agricultural runoff as contributing to high velocity flows in the Santa Clara River. The unarmored threespine stickleback prefers low flow backwater areas, while the arroyo chub and Santa Ana sucker can tolerate higher flows and were detected more frequently in high flow areas of the River (ENTRIX 2009). Culverts associated with temporary road crossings for agricultural operations create oxbows and lateral ponded areas that may provide suitable habitat for the unarmored threespine stickleback, but at the same time may provide suitable habitat for exotic species expected to prey on sticklebacks, such as African clawed frogs, largemouth bass, green sunfish, mosquitofish, and crayfish. The culverts also tend to increase local flow velocities that are detrimental to the unarmored threespine stickleback.

Although under existing land use practices, the Santa Clara River provides suitable habitat for native fish, without the preservation and management associated with the RMDP, including habitat restoration and enhancement in the River corridor and monitoring and management of exotic species such as African clawed frog and crayfish, the long-term suitability of the River corridor for native fishes is uncertain.

Amphibians. Populations of common and highly adaptable amphibians such as California treefrog, Pacific treefrog, and western toad are unlikely to be significantly affected on existing land uses, with the exception of the occasional loss of individuals due to crushing by vehicles and farm equipment and destruction of refugia by disking and cattle trampling (especially western toad, which uses uplands), as well as loss of insect prey resulting from the use of pesticides.

The western spadefoot toad could be directly affected by agricultural operations and cattle grazing, which could destroy or degrade ephemeral breeding locations, as well as aestivation/hibernation habitat adjacent to breeding locations. For example, this species has been detected in middle Potrero Canyon, which supports cattle grazing and agriculture, as well as oil pads and access roads.

Adult arroyo toads have not been documented in the Project area, it potentially could occur in the Santa Clara River and uplands adjacent to the River. The effects on existing land uses on the River corridor discussed above for fish, including increased flows and creation of temporary ponded areas at River crossings and the presence of exotic species such as mosquitofish, African clawed frog, and crayfish, could adversely affect habitat quality for the arroyo toad and preclude it from successfully breeding in the River corridor. Impairment of water quality from agricultural runoff, including pesticides and fertilizers, may affect their reproduction and development. Existing agricultural practices, such as disking, adjacent to the River adversely affect upland habitats potentially used by the arroyo toad for aestivation/hibernation.

Reptiles. Reptiles known from the Project include semi-aquatic species, such as southwestern pond turtle and two-striped garter snake and terrestrial species such as western whiptail, western fence lizard, side-blotched lizard, western rattlesnake, and gopher snake, among others.

The southwestern pond turtle primarily occurs in the Santa Clara River and likely is affected in a similar way as the fish and amphibian species by existing land use practices. The temporary culverts that create oxbows and lateral ponds at crossings of the River sometimes create suitable, but temporary, deepwater habitat for this species. On the other hand, agricultural uses adjacent to the River corridor may limit the pond turtle's use of the adjacent uplands for nesting and overwintering. Exotic and native predators of pond turtle hatchlings on site may include species currently known from the Project area such as largemouth bass, common ravens, and American crows.

Terrestrial reptiles would be affected by existing land use practices that result in habitat loss and degradation. Many of the lizards and/or snakes use rodent burrows for refuge and hunting, which may be trampled by cattle or disturbed by agricultural operations such as disking. Slow-moving diurnal species such as coast horned lizard, western rattlesnake, and gopher snake are also directly vulnerable to trampling by cattle, vehicle collisions, and farm equipment. Pesticides, including rodenticides, may result in prey reduction and loss of burrows used as for refuge, aestivation, and hibernation.

Mammals. The effect of existing land use practices on many common mammals known from the Project area is considered to be relatively benign. Urban-adapted species such as raccoon, cottontail rabbit, striped skunk, pocket gopher, California ground squirrel, and many small native rodents, such as deer mouse (*Peromyscus maniculatus*) and western harvest mouse (*Reithrodontomys megalotis*), actually thrive in disturbed habitats. The rodent species also provide primary prey for several raptor species, including most hawks and owls. The long-tailed weasel, American badger, and coyote, which prey on rodents and rabbits, also occur frequently in agricultural settings and are unlikely to be

significantly affected, although breeding dens and general activity of badgers may be relatively more affected and this species is vulnerable to vehicle collisions and farm equipment. The use of rodenticides may affect these three species due to loss of prey and/or secondary poisoning. Habitat loss and degradation due to existing land uses, however, does affect other mammals that rely on native habitat and vegetation cover, including larger species such as mule deer, mountain lion, and bobcat. These species tend to shy away from human activity and are also vulnerable to vehicle collisions. Smaller mammal species that use riparian and/or shrublands that may be degraded by existing land uses, and particularly cattle grazing, include gray fox, California pocket mouse, kangaroo rats (*Dipodomys* spp.), woodrats (*Neotoma* spp.), California mouse (*Peromyscus californicus*), brush mouse (*Peromyscus boylii*), cactus mouse (*Peromyscus eremicus*), and California vole (*Microtus californicus*). These species are also vulnerable to vehicle collisions between dusk and dawn when they attempt to cross roads.

Bats, as a group, are most likely to be affected by the loss of prey and/or secondary poisoning as a result of the use of pesticides associated with agricultural operations. Otherwise, because most bat species occurring in the Project area are generalist insectivores (insect eating) and many forage over agricultural areas in addition to most natural habitats, existing land uses probably have relatively little adverse affect on their overall foraging behavior. With regard to roosting sites, only one species—pallid bat—is known to have a maternity roost in the Project area: a building in middle Potrero Canyon. Other species use night roosts in the Santa Clara River and at the I-5 Bridge over the River, but no day roosts for the other species have been detected in the Project area. It is unknown whether existing land use practices have adversely affected the use of the potential day roosts on site.

Mollusks. The undescribed snail (genus *Pyrgulopsis*) is restricted to portions of the Middle Canyon Spring and the lower reach of the adjacent Middle Canyon drainage where surface water is present due to agricultural operations. This species may persist under existing land use practices because the Middle Canyon Spring will remain and agricultural runoff would continue to supply the Middle Canyon drainage under existing operations. However, under Alternative 1, preservation, monitoring, and management of habitat for snail would not occur. Changes in water quantity or quality in the spring or flow speed of water through the spring could result in multiple negative side affects, including elevated water temperatures, lower dissolved oxygen availability, and the accumulation of fine sediments which could smother preferred substrates and impair egg-laying or survivorship of eggs or young (Cordeiro 2002). Because 90% of the population turns over annually, any condition that impairs egg-laying or survivorship of eggs or young (*e.g.*, excessive smothering sedimentation) may result in extirpation (Furnish and Monthey 1998). The unchecked spread of non-native, invasive plant species into the spring could also threaten the snail population.

4.5.5.2.2.6 *Special-Status Wildlife*

Bird – Raptor. The special-status species in this guild observed on site include American peregrine falcon, California condor, Cooper's hawk, ferruginous hawk, golden eagle, loggerhead shrike, long-eared owl, merlin, northern harrier, prairie falcon, sharp-shinned hawk, turkey vulture, western burrowing owl, and white-tailed kite.

Existing land use practices probably have both positive and negative effects on these special-status raptors. Agriculture, disturbed land, and grazed grassland and pastures are beneficial to raptors that forage in open, sparsely vegetated habitats, such as American peregrine falcon, California condor, ferruginous hawk, golden eagle, loggerhead shrike, merlin, northern harrier, prairie falcon, sharp-shinned hawk, turkey vulture, western burrowing owl, and white-tailed kite. These raptors forage on small prey that commonly occur in these open habitats such as California ground squirrels, cottontail rabbits, pocket gophers, and other small rodents that are plentiful and easily captured. However, intensive or monoculture agriculture, such as row crops, is less suitable for these raptors because of a relative lack of prey using these areas. On the other hand, the Cooper's hawk that nests and forages in riparian and woodland habitats on site and the white-tailed kite that nests in riparian and woodland habitats likely have been negatively affected by existing practices such as grazing because of degradation of nesting habitat and potential disturbances of nest sites due to human activity. Grazing in particular reduces habitat quality in riparian and woodland communities as a result of congregating and trampling, facilitation of invasive annual grasses and weeds, and interference with recruitment in the case of oaks. In addition, pesticides associated with agriculture (*e.g.*, rodenticides and insecticides) may be harmful to raptors due to a reduced abundance of prey and/or secondary poisoning.

Bird – Riparian. The special-status species in this guild observed on site include black-crowned night heron, least Bell's vireo, Nuttall's woodpecker, tricolored blackbird, vermilion flycatcher, western yellow-billed cuckoo, willow flycatcher, yellow-headed blackbird, yellow warbler, and yellow-breasted chat.

Riparian birds generally are sensitive to habitat degradation that occurs from activities such as cattle grazing and invasive plant and animal species. Disturbance of horizontal and vertical structure and strata can significantly degrade nesting and foraging habitat for riparian birds. Reducing the functional width of riparian habitat, for example, increases adverse edge effects, such as invasion by exotic species and predation, as well as altering wind and solar exposures in the riparian zone. Cattle grazing damages important riparian nesting and foraging habitat and may attract brown-headed cowbirds, which can penetrate narrow riparian corridors and parasitize nests. Agriculture adjacent to the Santa Clara River may reduce upland foraging areas for some riparian species, such as least Bell's

vireo that uses adjacent upland habitats for foraging in the latter part of the breeding season. Pesticides used on agricultural crops may reduce insect prey availability and/or cause secondary poisoning as a result of birds foraging on contaminated food items, including insects, forbs, and seeds. Some species, such as black-crowned night heron, also may suffer reproductive impairment or failure from pesticides (County of Riverside 2008). Human activities associated with agriculture adjacent to riparian areas may attract predators and competitors of less common nesting species, such as common ravens, American crow, European starling, as well as mesopredators such as raccoons, opossum, and striped skunk.

Bird – Upland Grassland. The only special-status species in this guild observed on site is the California horned lark. The grasshopper sparrow has potential to occur on site, but has not been observed in the numerous surveys conducted between 1988 and 2007. The California horned lark commonly forages in agricultural areas and grazed lands and has been commonly observed on site in plowed and graded fields near the Santa Clara River. Existing land use practices are unlikely to have a significant negative effect on this species, although it could be susceptible to secondary poisoning from food items (insects, snails, spiders, seeds and forbs) contaminated by pesticides. In addition, this species, as an open ground nester, may attempt to nest in areas subject to disturbances associated with agricultural operations and oil and gas production, although it has not been observed to nest on site in the past.

Bird – Upland Scrub and Chaparral. The special-status species in this guild observed on site include Allen's hummingbird, chipping sparrow, coastal California gnatcatcher, Costa's hummingbird, rufous hummingbird, and southern California rufous-crowned sparrow.

Similar to riparian birds, scrub and chaparral birds are sensitive to land use practices that result in the loss and degradation of habitat. Existing agricultural operations and gas and oil production probably are not significant impacts on these species on site because areas that are periodically disturbed or disked, for example, would recover too slowly to provide habitat for these species. On site, most of the scrub and chaparral species occur in rugged areas that are not suitable for agricultural uses. However, the use of pesticides for agriculture may reduce insect prey and/or cause secondary poisoning through contaminated food items. Cattle grazing probably has had a substantial impact on scrub and chaparral species on site because cattle may wander through and browse on shrub vegetation. Cattle may also inhibit the recovery of scrub and chaparral communities after wildfires because they forage in recovering areas dominated by annual grasslands, trampling soils and new sprouts, and facilitating type conversion of the scrub and chaparral to annual grassland and weedy communities.

Bird – Upland Woodland. The special-status species in this guild observed on site include hermit warbler, Lawrence's goldfinch, and oak titmouse.

These species are also sensitive to land use practices that result in the loss and degradation of habitat. Existing agricultural operations and gas and oil production probably are not significant impacts on these species on site because oak woodlands generally are not directly affected by these activities. However, the use of pesticides may reduce insect prey and/or cause secondary poisoning through contaminated food items. Cattle grazing probably has had a substantial impact on upland woodlands on site because they browse on and may trample seedlings and saplings. Grazing disturbs soils and also promotes invasion by annual grasses, which compete with oak seedlings for soil moisture, adversely affecting recruitment of new oak individuals. Some areas of the High Country SMA that support grazing, for example, show little oak recruitment.

Bat. The special-status species in this guild directly confirmed or determined to have potential to occur on site based on acoustic signals include fringed myotis, long-legged myotis, pallid bat, pocketed free-tailed bat, western small-footed myotis, western mastiff bat, western red bat, and Yuma myotis.

Bats are most likely to be affected by the loss of prey and/or secondary poisoning as a result of the use of pesticides associated with agricultural operations. Otherwise, because most bat species occurring in the Project area are generalist insectivores (insect eating) and many forage at night over agricultural areas in addition to most natural habitats, existing land uses probably have relatively little adverse affect on their overall foraging behavior. Artificial lighting of existing facilities on site may attract bats because of the high abundance of insect prey and may alter competitive foraging relationships among the different species. With regard to roosting sites, only one species—pallid bat—is known to have a maternity roost in the Project area: a building in middle Potrero Canyon. Other species use night roosts in the Santa Clara River and at the I-5 Bridge over the River, but no day roosts for the other species have been detected in the Project area. It is unknown whether existing land use practices have adversely affected the use of the potential day roosts on site.

Insect. The two special-status species in this guild observed on site are the monarch butterfly and San Emigdio blue butterfly. Individual monarch butterflies have been observed, but no wintering sites are present. Existing land use practices are not expected to significantly affect the monarch butterfly. The San Emigdio blue butterfly is locally abundant at the west-central edge of Potrero Canyon in association with its primary host plant four-wing saltbush, as well as quail brush. Pesticide use associated with existing agricultural operations on Potrero Mesa just east of the San Emigdio blue butterfly colony could have an adverse effect on this species.

Fish. The special-status species in this guild occurring in the Santa Clara River reach within the Project area include the arroyo chub, Santa Ana sucker, and unarmored threespine stickleback.

As described generally for fish in **Subsection 4.5.3.4.3**, General Wildlife, agricultural runoff has contributed to high velocity flows in the Santa Clara River (ENTRIX 2009), which limits the distribution of unarmored threespine stickleback, but is generally tolerated by arroyo chub and Santa Ana sucker. Culverts associated with temporary crossings of the River create oxbows and lateral ponding that could be suitable for the unarmored threespine stickleback, but which are also suitable for assumed exotic predators of the stickleback, such as African clawed frogs, largemouth bass, green sunfish, mosquitofish, and crayfish. The culverts also tend to increase local flow velocities that are detrimental to the unarmored threespine stickleback.

Although under existing land use practices, the Santa Clara River provides suitable habitat for special-status fish, without the preservation and management associated with the RMDP, including habitat restoration and enhancement in the River corridor and monitoring and management of exotic species such as African clawed frog and crayfish, the long-term suitability of the River corridor for these fish is uncertain.

Reptile – Low Mobility. The special-status species in this guild observed on site include coast horned lizard, coastal western whiptail, and silvery legless lizard.

These species generally are sensitive to land use practices that result in habitat loss and degradation. The coast horned lizard and silvery legless lizard are particularly vulnerable to agriculture and cattle grazing. Cattle grazing degrades habitat quality by disturbing soils and facilitating invasion by annual grass and weedy species. Silvery legless lizards, which inhabit loose soils, are vulnerable because these disturbances reduce soil moisture and alter the conformation of the substrate. These activities thus may limit the food base or make the substrate physically unsuitable for silvery legless lizards (Jennings and Hayes 1994). Irrigation of crops increases moisture along the edges of fields, attracting Argentine ants which compete with and displace native harvester ants that are primary prey (up to 90%) for coast horned lizards. Coast horned lizards are also relatively sedentary and are vulnerable to trampling and crushing by cattle, as well as to vehicle collisions on dirt roads and to farm equipment on dirt roads and along the edges of habitat. Coastal western whiptail probably is more tolerant of habitat disturbances that open up habitats because as "runners" they prefer open ground and sparsely vegetated habitats, but type conversion of coastal scrub and chaparral to annual grassland as a result of grazing adversely affects this species. Whiptails are more mobile than horned lizards, but are also vulnerable to vehicles collisions and farm equipment. Pesticide use

associated with agriculture could also reduce insect prey for these species and/or cause secondary poisoning.

Reptile and Amphibian – Semi-Aquatic. The special-status species in this guild observed on site include southwestern pond turtle, two-striped garter snake, arroyo toad, and western spadefoot toad. These species generally are sensitive to land use practices that result in habitat loss and degradation.

The southwestern pond turtle primarily occurs in the Santa Clara River and likely is affected in a similar way as the special-status fish by existing land use practices. The temporary culverts that create oxbows and lateral ponds at crossings of the River sometimes create suitable, but temporary, deepwater habitat for this species. On the other hand, agricultural uses adjacent to the River corridor may limit the pond turtle's use of the adjacent uplands for nesting and overwintering. Exotic and native predators of pond turtle hatchlings on site may include species currently known from the Project area such as largemouth bass, common ravens, and American crows.

Adult arroyo toads have not been documented in the Project area, but it potentially could occur in the Santa Clara River and uplands adjacent to the River. The effects on existing land uses on the River corridor discussed above for special-status fish, including increased flows and creation of temporary ponded areas at River crossings and the presence of exotic species such as mosquitofish, African clawed frog, and crayfish, could adversely affect habitat quality for the arroyo toad and preclude it from successfully breeding in the River corridor. Impairment of water quality from agricultural runoff, including pesticides and fertilizers, may affect its reproduction and development. Existing agricultural practices, such as disking, adjacent to the River adversely affect upland habitats potentially used by the arroyo toad for aestivation/hibernation. Arroyo toads using these areas could be injured, killed, or buried by these activities.

The western spadefoot toad could be directly affected by agricultural operations and cattle grazing, which could destroy or degrade ephemeral breeding locations, as well as aestivation/hibernation habitat adjacent to breeding locations. For example, this species has been detected in middle Potrero Canyon, which supports cattle grazing and agriculture, as well as oil pads and access roads.

The two-striped garter snake probably is less affected by existing land use practices than the other semi-aquatic special-status species, but it may be secondarily affected by exotic species such as mosquitofish that prey on treefrogs and newts (Goodsell and Kats 1999) that are, in turn, prey for the two-striped garter snake.

Mammal – Low Mobility. The only special-status species in this guild observed on site is the San Diego desert woodrat. This species is relatively common in coastal scrub and

chaparral on site. Similar to scrub and chaparral birds, the San Diego desert woodrat is sensitive to land use practices that result in the loss and degradation of habitat. Existing agricultural operations and gas and oil production probably are not significant impacts on this species because areas that are periodically disturbed or disked would recover too slowly to provide habitat for this species. On site, most of the scrub and chaparral is in rugged areas that are not suitable for agricultural uses. Cattle grazing probably has had a substantial impact on the San Diego desert woodrat on site because cattle may wander through and browse on shrub vegetation. Cattle may also inhibit the recovery of scrub and chaparral communities after wildfires because they forage in recovering areas dominated by annual grasslands, trampling soils and new sprouts, and facilitating type conversion of the scrub and chaparral to annual grassland and weedy communities. The San Diego desert woodrat also is vulnerable to vehicle collisions and farm equipment between dusk and dawn, although this species tends to confine its activities to areas around dens or middens. It would be at highest risk of collisions during dispersal.

Mammal – Moderate Mobility. The special-status species in this guild observed on site include the American badger and San Diego black-tailed jackrabbit. The ringtail cat is also in this guild but has not been observed on site.

Both the American badger and San Diego black-tailed jackrabbit generally are tolerant of the existing land use practices. As open habitat species, both may occur in relatively high densities in low-intensity agricultural areas, grazed lands, and other disturbed areas such as oil and gas production sites. The main risk for both species is vehicle collisions and farm equipment, as well as human activity; both species are shy of humans and will leave areas when disturbed. In addition, both species may attempt to breed in areas subject to disturbances. The badger is especially vulnerable to breeding den disturbances from agricultural operations because young may remain in the natal den for up to six weeks. Black-tailed jackrabbits are less vulnerable to nest impacts because nests are usually small depressions and the young are independent of the nest within about 24 hours. The badger is also vulnerable to the use of rodenticides due to loss of prey and/or secondary poisoning.

Mammal – High Mobility. The special-status species in this guild observed on site include American black bear, mountain lion, and mule deer. The American black bear does not typically occur in the lower elevations the Project area subject to most of the existing land use practices and probably only uses these areas when moving between suitable habitat areas north and south of the site. This species is addressed in more detail in **Subsection 4.5.3.4.7**, Wildlife Habitat Connectivity and Buffers. The mule deer is common on site and the mountain lion is uncommon, but occasionally observed.

Both the mule deer and mountain lion are sensitive to existing land use practices that result in habitat loss and degradation because both rely on riparian, woodland, and shrubby vegetation for cover and refuge. As noted above for other guilds, cattle grazing degrades these habitats. Mule deer also may compete with cattle for food resources ((NatureServe 2007; Zeiner *et al.* 1990B). Both species tend to shy away from human activity and may alter their behavior patterns to avoid humans. Mountain lions, for example, shift their natural foraging activities to after sunset in areas with higher human activity (Van Dyke *et al*. 1986). Both species are vulnerable to vehicle collisions.

Mollusk. The undescribed snail (genus *Pyrgulopsis*) is the only special-status species in this guild observed on site. It is restricted to portions of the Middle Canyon Spring and the lower reach of the adjacent Middle Canyon drainage where surface water is present due to agricultural operations. This species may persist under existing land use practices because the Middle Canyon Spring will remain and agricultural runoff would continue to supply the Middle Canyon drainage under existing operations. However, under Alternative 1, preservation, monitoring, and management of habitat for snail would not occur. Changes in water quantity or quality in the spring or flow speed of water through the spring could result in multiple negative side affects, including elevated water temperatures, lower dissolved oxygen availability, and the accumulation of fine sediments which could smother preferred substrates and impair egg-laying or survivorship of eggs or young (Cordeiro 2002). Because 90% of the population turns over annually, any condition that impairs egg-laying or survivorship of eggs or young (*e.g.*, excessive smothering sedimentation) may result in extirpation (Furnish and Monthey 1998). The unchecked spread of non-native, invasive plant species into the spring could also threaten the snail population.

4.5.5.2.2.7 *Wildlife Habitat Linkages, Corridors, and Buffers*

As noted above, current wildlife use of the Project area is probably relatively unconstrained by existing land use practices. This subsection describes the potential impacts of Alternative 1 on wildlife landscape linkages, wildlife corridors, wildlife crossings, and wildlife buffers.

Wildlife Habitat Linkages. Under Alternative 1, RMDP facilities would not be constructed and build-out of the Specific Plan, VCC, and the Entrada planning areas would not occur. The Project area would remain undeveloped and wildlife would continue to use the area. **Figure 4.5-21** shows the conceptual regional open space connectivity identified by Penrod *et al.* (2006). This habitat linkage would remain intact and relatively undisturbed. However, the High Country SMA and Salt Creek area would not be preserved as public open space and existing activities such as cattle grazing and agriculture would continue. Activities anticipated under management, including creation,

restoration, and/or enhancement of native vegetation communities (including riparian, oak woodland, and coastal scrub) and removal of grazing (except for long-term resource management activities) would not occur. Nonetheless, with existing land use practices it is expected that mule deer and mountain lion, as well as American black bear, will continue to use these areas for movement across the landscape and to access large habitat areas such as the Santa Susana Mountains, the Fillmore Greenbelt, and the Los Padres and Angeles National Forests.

Wildlife Corridors. **Figure 4.5-31** shows thirteen potential wildlife corridors in the Project area. These corridors currently provide relatively unconstrained habitat connections throughout the Project area. Under Alternative 1, RMDP facilities would not be constructed and build-out of the Specific Plan, VCC, and the Entrada planning areas would not occur. These wildlife corridors would remain intact and generally unconstrained and wildlife would continue to use the area. Wildlife would remain subject to ongoing activities, such as cattle grazing, oil production, and agriculture. Under Alternative 1, the main east-west corridor along the Santa Clara River SMA would not be conserved and managed as an SMA. Restoration and enhancement of riparian vegetation, removal of cattle, and monitoring and control of invasive species such as African clawed frog and crayfish that prey on native amphibians and fish that use the River corridor would not occur under Alternative 1. Temporary road crossings of the River and associated culverts would continue to be constructed, creating oxbows and lateral ponding, which may benefit some species such as southwestern pond turtle and unarmored threespine stickleback, but which also may create habitat for exotic predators such as largemouth bass, African clawed frog, green sunfish, mosquitofish, and crayfish.

Wildlife Crossings. **Figure 4.5-32** shows six of the largest existing crossings that can be accessed by wildlife coming directly from adjacent uplands or by moving along the Santa Clara River. These crossings would all remain for the foreseeable future in their present form and will function as they do now under Alternative 1. The Chiquito Creek crossing is currently a triple box culvert that may have limited function because it is filling with sediments.

Wildlife Buffers. Under Alternative 1, RMDP facilities would not be constructed and build-out of the Specific Plan, VCC, and the Entrada planning areas would not occur. Under Alternative 1, wildlife would be subject the same activities as existing conditions, including disturbances from ongoing agriculture, oil field production, and cattle grazing. These ongoing effects include pesticides, irrigation, lighting, noise, and dust, which have adverse effects on species occurring in the Project area in areas adjacent to these activities.

Pesticides used on crops may extend into adjacent habitat, resulting in direct impacts on native species or secondarily by reducing insect prey or contaminating prey and other food items such as seeds, causing secondary poisoning. Herbicides may have direct effects on native plants at the interface between the fields and the native vegetation communities, reducing wildlife habitat value along the interface.

Irrigation of crops may increase soil moisture along the edges of fields, attracting Argentine ants, which adversely affect native species such as coast horned lizard, as well as other native birds and reptiles. Irrigation and/or soil disturbances along the edges of agricultural fields, oil and gas production facilities, and access roads may also facilitate the invasion of natural habitat by exotic invasive species, thus reducing wildlife habitat value. Fertilizers, for example, can enter wetland and riparian systems and cause algae blooms and eutrophication. They also can enhance growth of non-native species in upland edge areas. Over-irrigation can result in erosion and release of sediments, as well as chemical pollutants, into adjacent habitats, and particularly riparian and wetland areas.

Artificial lighting associated with agricultural and oil and gas production facilities may attract mesopredators and increase the detectability of prey, including rodents, nocturnal amphibians and reptiles, and nesting birds. Artificial lighting can also adversely affect behavioral activities, daily rhythms, hormonal regulation, and increase stress on wildlife. Artificial lighting also attracts insects, which, in turn, attract predators such as bats and nocturnal wildlife, potentially altering foraging competitive relationships among these species.

Noise and vibration from farm equipment, oil and gas production equipment, and occasional vehicle passage can disrupt behavioral activities of activities. Unlike chronic traffic noise to which many wildlife species can habituate or adapt, noises that are discrete, sudden, or surprising tend to be more startling and more disruptive of behavior; *e.g.*, causing freezing, flight responses, and increasing stress. Such noises also may mask noises made by predators (*e.g.*, during stalking) and increase predation rates. Excessive vibration may directly disturb terrestrial species that occupy burrows, dens, and depressions, such as rodents, coyotes, badgers, and rabbits, and causing them to abandon these areas or actual collapse of burrows and dens.

Excessive dust from disking and other agricultural operations and vehicles on dirt roads use can decrease the vigor and productivity of adjacent plant communities through effects on light and penetration as well as photosynthesis, respiration, transpiration; increased penetration of phytotoxic gaseous pollutants; and increased incidence of pests and diseases.

4.5.5.2.2.8 *Special-Status Plants*

Most of the special-status plants species are subject to one or more disturbances that would continue as a result of existing land use practices, including cattle grazing, agricultural operations, and gas and oil production.

Cattle grazing can result in direct impacts on these special-status plants from trampling and browsing. Cattle also trample soils and facilitate colonization by non-native grasses and other weedy species that compete with native species for space, light, nutrients, and water. Special-status plant species that are vulnerable to cattle grazing because they may occur in grasslands and coastal scrub subject to grazing impacts are San Fernando Valley spineflower, slender mariposa lily, California black walnut, island mountain-mahogany, late-flowered mariposa lily, oak-leaved nemophila, Parish's sagebrush, Peirson's morning-glory, Plummer's mariposa lily, Ojai navarretia, and oak trees.

Several of the San Fernando Valley Spineflower and slender mariposa lily occurrences are adjacent to agricultural fields, including Grapevine Mesa, Airport Mesa, and Potrero Mesa. Surface and subsurface hydrology may be altered at the interface between agriculture and habitat areas supporting these species as a result of irrigation and runoff, including herbicides, insecticides, and fertilizers that may adversely affect special-status plants. Fertilizers, for example, may facilitate the dispersion and growth of non-native species that outcompete and/or displace special-status plants. Irrigation and runoff from agricultural fields may chronically increase moisture levels at the interface between the fields and special-status plant populations, attracting non-native Argentine ants that may displace or compete with native insect pollinators, such as native ants. Airborne herbicides and pesticides may also directly affect special-status plants near agricultural areas by directly killing plants or reducing their vigor and long-term productivity, as well as secondarily affecting these plants through impacts on insect pollinators and insect and vertebrate seed dispersers (*e.g.*, native ants and small rodents). Disking, vehicles, and the moving of farm equipment generates dust which may affect the vigor and vitality of adjacent populations of San Fernando Valley Spineflower and slender mariposa lily. Additional clearing of vegetation related to agriculture and oil and gas production may change solar and wind conditions at the edges of habitat that supports these populations, also affecting their vigor and long-term productivity.

Although other special-status plant species on site currently are not as vulnerable to the secondary effects of agriculture, they would be subject to similar impacts if areas adjacent to existing populations were converted to agriculture in the future.

The undescribed everlasting is not as vulnerable to cattle grazing, agriculture, and oil and gas production because it is limited to three areas: in the Santa Clara River near the mouth of Long Canyon, in Castaic Creek south of SR-126, and in Castaic Creek west of I-5 and east of Commerce Center Drive.

Mainland cherry is not as vulnerable to grazing impacts as the species listed above because it is large shrub. It is an occasional component of undifferentiated chaparral, big sagebrush scrub, and river wash and does occur in areas where cattle graze. Therefore, it is possible that seedlings could be browsed.

The undescribed sunflower occurs in association with the Middle Canyon Spring. Under Alternative 1, the Middle Canyon Spring would remain intact, but would not be specifically protected, monitored, or managed. The present characteristics of the spring area probably are influenced to a large extent by the position of the berms and outflow channels. Without these berms and channels, the spring would likely naturally have a more diffuse sheeting outflow and extend its margins toward the edge of the Santa Clara River terrace. Under Alternative 1, measures to restore a more natural flow west of the current spring area would not be implemented. In addition, the loose bank material associated with the adjacent road cut into the steep hill above the entire south margin of the spring area may not be stabilized and/or closed to control erosion and sedimentation.

Southwestern spiny rush only occurs in the Santa Clara River within the Specific Plan area where grazing is excluded. However, under Alternative 1, the Santa Clara River corridor would not be specifically protected and restoration and enhancement and management would not occur. Therefore, southwestern spiny rush in these areas could be affected by invasive species that occur in the River corridor, such as giant reed.

4.5.5.2.2.9 *Comparison of Alternatives 2 through 7*

This subsection provides a general comparison of Alternatives 2 through 7 with regard to direct impacts due to implementation of the RMDP and SCP. Direct permanent loss of vegetation communities and land covers would result from proposed RMDP improvements for all six alternatives, including construction of bridges and associated piers and abutments; road crossing culverts; bank stabilization/protection that includes ungrouted rock riprap, turf reinforcement mats, and exposed gunite slope-lining protection under bridge crossings and their abutments; drainage facilities that include partially lined open channels; grade controls and other channel improvements, including grade control structures in tributaries, engineered natural channels in Potrero, Long, and Lion canyons, grouted sloping boulder drops, non-grouted boulder step-pools, soil-cement grade control structures, sculpted concrete drop structures, and check structures; water reclamation plant outfall; water quality control features, such as water quality basins, debris basins, detention basins, catch basin inserts, and biorention features; various roadway improvements to SR-126; and recreation facilities (see **Section 2.0**, Project Description, for full details). Permanent loss of artificial land covers will also occur as a result of habitat restoration and enhancement activities for all six alternatives.

While all six alternatives include similar RMDP facilities and spineflower preserves, they differ in the details and extent of these facilities (see **Section 3.0**, Description of Alternatives, for a

complete treatment of the alternatives). **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7, summarizes key differences in RMDP facilities and the spineflower preserves among the six alternatives.

Table 4.5-24
Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7

RMDP Infrastructure Facilities	Alternative					
	2	**3**	**4**	**5**	**6**	**7**
Total direct permanent impacts (acres)	393.9	349.8	335.2	403.8	382.6	172.4
Total direct temporary impacts (acres)	201.4	249.9	247.0	243.7	248.9	571.6
Combined Direct and Temporary Impacts (acres)	**595.3**	**599.7**	**582.2**	**647.5**	**631.5**	**744.0**
Santa Clara River Major RMDP Infrastructure						
Bank stabilization (linear feet)	29,779	28,588	28,791	29,001	28,117	27,547
Outlets (number)	28	28	28	28	28	28
Bridges (number and locations[1])	3 CCD LCR PCR	2 CCD LCR	2 CCD LCR	3 CCD LCR PCR	2 LCR PCR	1 LCR
Tributary Drainage RMDP Infrastructure						
Drainage modified (linear feet)	55,874	60,041	58,227	59,125	59,880	21,177
Buried storm drain (linear feet)	59,845	60,010	59,868	60,683	43,335	19,330
Bank stabilization – west bank (linear feet)	36,943	33,425	32,981	60,715	39,266	39,692
Bank stabilization – east bank (linear feet)	38,591	34,443	33,546	0	38,140	46,281
Preserved drainage (linear feet)	126,380	122,050	124,006	122,293	138, 887	201,593
Bridge crossings (number)	0	3	2	7	9	15
Culverts (number)	15	12	9	8	7	0
Spineflower Preserves						
Preserve size (acres)	167.6	221.8	259.9	338.6	891.2	660.6
Spineflower preserved (acres)	13.9	15.6	16.6	17.0	17.9	19.9
Spineflower impacted (acres)	6.4	4.6	3.6	3.2	2.4	0.4

[1]Bridges:
CCD – Commerce Center Drive
LCR – Long Canyon Road
PCR – Potrero Canyon Road

The combined total RMDP direct permanent and temporary impacts are similar among the alternatives, with a range of 582 acres for Alternative 4 to 744 acres for Alternative 7. However, unlike Alternatives 2 through 6 where permanent impacts account for 57.6% to 66.2% of the total impacts, for Alternative 7, permanent impacts account for about 76.8% of the impacts. Alternative 7 would have the least amount of permanent impacts resulting from construction of RMDP facilities.

Along the Santa Clara River, the major RMDP facilities include bank stabilization, outlets, and bridges. Generally, the linear feet of bank stabilization constructed along the Santa Clara River is greatest with Alternative 2 and the least with Alternative 7. The differences in the amount of bank stabilization among the Alternatives 2 through 6 generally relate to the number and size of bridge crossings, and for Alternative 7, the number of bridge crossings and the amount of interface between the Specific Plan development area and the Santa Clara River. Alternatives 3, 4, and 5 have intermediate amounts of bank stabilization, and Alternative 6 has the second least amount. Alternatives 3 and 4 have substantially less bank stabilization compared to Alternative 2 because Potrero Canyon Road Bridge would not be constructed under these alternatives. Alternative 5 would include Potrero Canyon Road Bridge, but bank stabilization is configured differently from Alternative 2 because the bridge in Alternative 5 would be almost 1,000 feet longer compared to Alternative 2. The Commerce Center Drive Bridge would not be constructed under Alternatives 6 and 7. Under Alternative 6, the Potrero Canyon Bridge would be more than 1,000 feet longer than under Alternative 2 and 100 feet longer than under Alternative 5. Under Alternative 7, only the Long Canyon Road Bridge would be constructed and development in the Landmark Village and Homestead East Village areas would be pulled back from the Santa Clara River corridor.

The number of drainage outlets along the Santa Clara River would be the same for all alternatives.

Impacts in tributary drainages include modification of drainages, buried storm drains, bank stabilization, bridge crossings, and culverts. Alternatives 2 through 7 would have varying amounts of modified drainages in the tributaries to the Santa Clara River, with a range of 21,177 linear feet for Alternative 7 to 60,041 linear feet for Alternative 3. The vast majority of these modifications would occur in the major drainages of Chiquito, Lion, Long, Potrero, and San Martinez Grande canyons. For drainages converted to buried storm drains, Alternatives 2 through 5 would have similar amounts of conversion, ranging from 59,845 linear feet to 60,683 linear feet. Alternative 7 would have the least amount of buried storm drains at 19,330 linear feet, and Alternative 6 would have an intermediate amount at 43,335 linear feet. West bank stabilization related to tributary drainages would be similar for Alternatives 2, 3, 4, 6, and 7, ranging from 32,981 to 39,692 linear feet, but would be substantially greater Alternative 5 (60,715 linear feet). East bank stabilization related to tributary drainages would be similar for Alternatives 2, 3, 4, 6, and 7, ranging from 33,546 to 46,281 linear feet, but would be zero for Alternative 5.

The amount of preserved tributary drainage would be generally similar under Alternatives 2 through 6, ranging from 122,050 linear feet for Alternative 3 to 138,887 linear feet for Alternative 6. Alternative 7 would have substantially higher preserved tributaries (201, 593 linear feet) compared to the other alternatives.

The number of bridge crossings of tributary drainages would increase for each of the alternatives sequentially and the number of culverts would decrease, reflecting a tradeoff in the construction of bridges versus culverts among the different alternatives.

As the total impacts decrease with each of the alternatives sequentially, the spineflower preserves would be larger, with the smallest cumulative spineflower preserve area under Alternative 2 (168 acres) and the largest under Alternative 6 (891 acres). Similarly, the amount of preserved habitat occupied by spineflower would generally increase with each alternative, ranging from 14 acres for Alternative 2 to 20 acres for Alternative 7.

4.5.5.2.3 Impacts to Vegetation Communities and Land Covers

As described in detail in **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, direct and indirect impacts represent the absolute physical loss of a biological resource due to implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, respectively, and are analyzed in six ways: (1) permanent loss of vegetation communities, land covers, and general wildlife and their habitat; (2) permanent loss of or harm to individuals of special-status plant and wildlife species; (3) permanent loss of suitable habitat for special-status species; (4) permanent loss of wildlife movement and habitat connectivity in the Project area; (5) temporary loss of vegetation communities, land covers, and general wildlife and their habitat; and (6) temporary loss of suitable habitat for special-status species.

Secondary impacts are those reasonably foreseeable effects caused by Project implementation on remaining or adjacent biological resources outside the construction disturbance zone. Secondary impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas.

Subsection 4.5.5.2.3.1, Summary Descriptions of Impacts to Vegetation Communities and Land Covers of the EIS/EIR Alternatives, provides a general description of impacts to general vegetation and land covers. Vegetation and land cover types are organized at the CNDDB (CDFG 2003) general physiognomic and physical location level for the purpose of this summary description.

This general discussion of impacts to vegetation communities and land covers is organized as follows:

- Permanent and temporary losses of vegetation communities and land covers under the Alternatives 2 through 7 resulting from implementation of the RMDP and SCP;
- Permanent losses of vegetation communities and land covers under the six alternatives resulting from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas; and

- Secondary impacts to vegetation communities and land covers under the six alternatives resulting from construction activities and long-term occupation of the Project area.

Subsection 4.5.5.2.3.2, Detailed Descriptions of Impacts to Vegetation Communities and Land Covers, provides a much more comprehensive analysis of direct impacts to vegetation communities and land covers resulting from implementation of the RMDP and SCP; indirect impacts resulting from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas; and secondary impacts resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only) and Entrada planning areas. This subsection breaks out each vegetation community (*e.g.*, alluvial scrub and arrow weed scrub), analyzes the removal of the vegetation community or land cover and secondary impacts resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under each of the alternatives, and evaluates the significance of the vegetation removal in accordance with impact significance criteria established in **Subsection 4.5.4**, Impact Significance Criteria. For impacts found to be significant, absent mitigation, applicable mitigation measures are summarized that would reduce the impact to a level that is adverse but not significant.

4.5.5.2.3.1 *Summary Descriptions of Impacts to Vegetation Communities and Land Covers of the EIS/EIR Alternatives*

Direct Impacts. A summary of the general vegetation and land cover types that would be permanently and temporarily lost as a result of the RMDP and SCP for Alternatives 2 through 7 can be found in **Table 4.5-25**, Permanent and Temporary Loss of General Vegetation and Land Cover Types for Alternatives 2 through 7 Resulting from Implementation of RMDP and SCP. The main difference between the six alternatives is substantially less reduction of bog and marsh and riparian and bottomland habitat under Alternative 7 when compared to the other alternatives. Alternative 7 would result in the permanent loss of 0.7 acre of bog and marsh and 17 acres of riparian and bottomland habitats, compared to a range of 7.8 acres to 13 acres of permanent loss of bog and marsh and a range of 66 acres to 104 acres of permanent loss of riparian and bottomland habitat by the other alternatives. Temporary loss of bog and marsh and riparian and bottomland habitats would be similar under all six alternatives, with a range of 4.3 to 5.8 acres for bog and marsh, and a range of 95 acres to 111 acres for riparian and bottomland habitats. Similar amounts of native upland vegetation types (chaparral, scrub, and broad leaf upland tree dominated) would be permanently and temporarily lost under Alternatives 2 through 6, and Alternative 7 would have somewhat less permanent loss and more temporary loss of these upland vegetation types. Also, similar amounts of annual grassland, agriculture, developed or disturbed would be permanently and temporarily lost under Alternatives 2 through 6, and Alternative 7 would have substantially less permanent loss and substantially more temporary loss of these non-native and manmade land covers.

Indirect Impacts. Indirect impacts represent the absolute physical loss of a biological resource due to build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. Alternatives 2 and 3 include build-out of the Specific Plan, VCC, and the Entrada planning areas, while Alternatives 4, 5, 6, and 7 only include build-out of the Specific Plan and the Entrada planning areas.

Table 4.5-25
Direct Permanent and Temporary Loss of General Vegetation and Land Cover Types for Alternatives 2 through 7 Resulting from Implementation of RMDP and SCP

General Physiognomic and Physical Location[1]	Total in Project Area (acres)	Alternative											
		2		3		4		5		6		7	
		Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)
Chaparral	2,146.0	26.2	1.5	25.4	1.8	26.9	1.5	26.9	1.8	24.0	1.8	20.8	9.1
Scrub	4,336.1	30.8	2.3	28.5	4.5	28.9	2.0	33.0	6.0	28.5	7.6	18.7	12.5
Native grassland	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bog and marsh	205.9	12.5	4.3	8.3	4.8	7.8	4.6	8.7	5.8	8.4	4.6	0.7	4.3
Riparian and bottomland habitat	982.8	103.5	98.3	81.3	105.2	83.4	95.5	88.2	110.7	65.8	102.0	16.9	95.3
Broad leafed upland tree dominated	1,467.5	9.3	1.4	9.5	1.4	8.9	1.4	13.1	1.4	18.3	1.4	5.6	13.2
California walnut woodland	27.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
California annual grassland, agriculture, developed, or disturbed	5,121.9	211.6	93.6	196.8	132.2	179.1	142.0	233.8	118.1	237.5	131.7	112.2	437.6
Total	**14,288.0**	**393.9**	**201.4**	**349.9**	**249.9**	**335.2**	**247.0**	**403.8**	**243.7**	**382.6**	**248.9**	**175.0**	**572.0**

[1]General physiognomic and physical location classifications are from the "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003).

As shown in **Table 4.5-26,** Loss of General Vegetation and Land Cover Types for Alternatives 2 through 7 Resulting from Build-Out of Specific Plan, VCC, and Entrada Areas, the total loss of vegetation communities and land cover types associated with Alternatives 2 and 3 is similar. The percent loss of vegetation communities and land cover types under the six alternatives ranges from a low of 24% for Alternative 7 to a high of 36% for Alternative 2. The loss associated with Alternatives 4, 5, and 6 is generally lower compared to Alternatives 2 and 3 because the approximately 206-acre VCC would not be constructed. The total vegetation community and land cover loss for Alternative 7 is more than 1,440 acres lower than Alternatives 2 and 3 because VCC would not be constructed and large areas of agriculture in Landmark Village and Homestead Village East adjacent to the Santa Clara River would not be developed. This difference is mostly reflected in the category California annual grassland, agriculture, developed, or disturbed where the difference is more than 860 acres between Alternative 7 and Alternatives 2 and 3. Permanent loss of vegetation and land covers under Alternative 7 would also be substantially lower than Alternatives 4, 5, and 6 because of the avoidance of the agricultural areas in Landmark Village and Homestead Village East. For example, there is a 217-acre reduction in the loss of agriculture for Alternative 7 compared to Alternative 6, which would have the lowest impact to agriculture of the other alternatives.

Table 4.5-26
Indirect Permanent Loss of General Vegetation and Land Cover Types for Alternatives 2 through 7 Resulting from Build-Out of Specific Plan, VCC, and Entrada Areas

General Physiognomic and Physical Location[1]	Total in Project Area (acres)	Alternative (acres)					
		2	3	4	5	6	7
Chaparral	2,145.9	430.7	417.3	407.9	409.0	406.5	326.9
Scrub	4,336.2	1,493.3	1,415.5	1,373.8	1,322.3	1,094.1	1,012.8
Native grassland	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Bog and marsh	205.9	2.5	0.6	0.8	0.0	0.0	0.0
Riparian and bottomland habitat	982.8	106.4	84.5	66.6	64.2	35.6	21.8
Broad leafed upland tree dominated	1,467.5	85.4	66.2	64.8	65.9	40.5	44.4
California walnut woodland	27.2	0.0	0.0	0.0	0.0	0.0	0.0
California annual grassland, agriculture, developed, or disturbed	5,121.9	3,081.2	2,957.5	2,821.9	2,767.6	2,548.5	2,088.3
Total	**14,288.0**	**5,199.5**	**4,940.6**	**4,735.9**	**4,629.0**	**4,125.2**	**3,494.2**

[1] General physiognomic and physical location classifications are from the "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003).

The general trend of reduction in loss, successively from Alternative 2 to Alternative 7, is also generally true for each of the different vegetation and land cover types. Alternative 2 would have the largest loss of each of the different vegetation and land cover types and Alternative 7 would have the smallest loss for each. However, Alternative 7 would result in a relatively lower loss of riparian and bottomland habitat when compared to the other alternatives in relation to the comparative loss of upland vegetation and land cover. For example, a comparison of Alternative 7 with Alternative 2 shows that Alternative 7 has 67% of the loss of Alternative 2 overall (*i.e.*, 3,494 acres under Alternative 7 versus 5,200 acres under Alternative 2), 76% of the loss of chaparral, 68% of the loss of scrub, 52% of the loss for broad leaf upland tree dominated, and 68% of the loss of California annual grassland, agriculture, developed, or disturbed land cover types. In contrast, Alternative 7 has 20% of the loss of riparian and bottomland habitat compared to Alternative 2 and 61% of the loss under Alternative 6, which has the next lowest loss of riparian and bottomland habitat of the other alternatives.

Secondary Impacts. Secondary impacts on vegetation communities and land covers are foreseeable impacts that could occur under all of the alternatives and that could reduce the vigor and quality of native and naturalized (*e.g.*, California annual grassland) vegetation communities as a result of short-term construction-related impacts and long-term impacts related to development. Secondary impacts on manmade land cover types are considered to be minimal. This section describes each of the potential secondary impacts and how they compare among the different alternatives.

Short-Term Construction-Related Secondary Impacts. Short-term construction-related secondary impacts are discussed in detail in **Subsection 4.5.5.1**, Impact Analysis Approach. The relative level of these secondary impacts for the different alternatives is briefly summarized here. Short-term construction-related impacts generally would be similar for implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas and would be common to all six alternatives, but would differ in degree among the alternatives. For example, with fewer total indirect impacts, these secondary impacts would be somewhat less under Alternative 7 compared to the other alternatives, because there would be less edge between open space and development areas.

Hydrologic Alterations and Water Quality Impacts. Construction of RMDP facilities, including bank stabilization; construction of bridges, associated piers, and abutments; and construction of drainage culverts, could result in hydrologic and water-quality-related impacts adjacent to and downstream of the impact area. Hydrologic alterations include changes in flow rates and patterns in streams and rivers as well as dewatering that may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities. Water quality impacts include chemical and toxic compound pollution (fuel, oil,

lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Water temperature changes also may occur due to short-term changes to the active channel morphology, thus affecting vegetation communities in these areas.

All of the alternatives would have similar short-term construction-related impacts on hydrology and water quality because the facilities are relatively the same among the alternatives and only differ in the relative amount and duration of the impact. For example, for bank stabilization, if it is assumed that on average 100 linear feet can be completed per week, then bank stabilization for 29,844 linear feet along the Santa Clara River under Alternative 2 would take 299 weeks while bank stabilization for 25,561 linear feet along the Santa Clara River under Alternative 7 would take 256 weeks, all things being equal. Similarly, short-term hydrology and water quality impacts from construction of piers and abutments would be proportional to the number of bridges constructed under the six alternatives. Alternatives 2 and 5 would construct three bridges over the Santa Clara River; Alternatives 3, 4, and 6 would construct two bridges; and Alternative 7 would construct one bridge (as seen in **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7). The combined potential impacts to hydrology and water quality of modified drainages and buried storm drains in the tributaries would be similar for Alternatives 2 through 5, ranging from 106,954 linear feet for Alternative 2 to 103,535 linear feet for Alternative 4. Alternative 6 has substantially less modification to tributaries at 94,336 linear feet, and Alternative 7 has relatively little modification, with 19,247 feet of buried storm drain and no drainage modification. Also, the potential risk of impacts to hydrology and water quality in the tributaries is relatively low because most of the tributaries lack perennial flows that would convey local impacts (ENTRIX 2009).

Dust. Dust impacts that could decrease the vigor of plant communities would be similar for the different alternatives, with progressively fewer impacts with succeeding alternatives due to a general reduction of construction activities.

Oak Tree Root Systems. Impacts to oak tree root systems may occur due to soil compaction, pollutants, or toxic compounds. Although potential secondary impacts to oak tree root systems were not quantified, the relative secondary impacts under the different alternatives are expected to be proportional to the permanent and temporary impacts on oak trees. All of the alternatives have similar levels of permanent or temporary impacts on regulated oak trees resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas; ranging from 1,198 trees (5%) for Alternative 7 to 1,363 trees (6%) for Alternative 2. Therefore, potential secondary impacts to oak tree root systems are anticipated to be relatively similar among all of the alternatives.

Accidental Clearing, Trampling, or Grading. The risk of accidental clearing, trampling, or grading of vegetation communities outside designated construction zones would be similar under the different alternatives and proportional to the size of the grading footprints and the amount of interface with natural vegetation communities. Alternatives 2 and 3, which include construction of VCC (Alternatives 2 and 3 only), would have the greatest relative risk of accidental clearing, trampling, or grading, although much of VCC is already bordered by existing development. Alternatives 6 and 7 would have the least relative risk of accidental clearing, trampling, or grading because of reduced impacts, and Alternative 6 probably has the least risk because of reduced impacts in Potrero Village and Mission Village due to larger spineflower preserve areas.

Trash and Other Debris. The risk of trash and other debris that degrade habitat would be similar under the different alternatives and generally would be a function of the duration of construction activities. Presumably the alternatives with the greatest impacts (*i.e.*, Alternatives 2 and 3) would have the greatest relative risk and the alternatives with the least impacts (*i.e.*, Alternatives 6 and 7) would have the least relative risk, given the gradational reduction in urban land use and construction activities needed for build-out.

Long-Term Secondary Impacts. Potential long-term development-related secondary impacts may operate at both the broader landscape scale and locally along the open space–development interface, or "edge" areas. As with short-term construction-related impacts, long-term development-related secondary impacts generally would be similar for implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and the Entrada planning areas and would be common to all six alternatives, but would differ in degree among the alternatives.

Habitat Fragmentation and Isolation. Habitat fragmentation and some level of isolation of plant communities, including related potential impacts on seed and plant material dispersal (*e.g.*, wind-borne, water-transported, or animal vectors) and plant pollinators, as a result of implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would occur under all of the alternatives.

Habitat fragmentation and isolation resulting from the Project can be evaluated on two scales: (1) the larger regional landscape level that extends beyond the Project boundaries; and (2) the local Project-level scale relating to open space within the Project's outer boundaries (which includes non-preserve natural open space and manufactured open space). From a regional landscape level, build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under the different alternatives would have a similar effect on habitat fragmentation and isolation because the outer boundary or perimeter of the Project development area is essentially the same (see

Figures 4.14-2 through **4.14-7** in **Section 4.14**, Land Use). Under all of the alternatives, the same areas of the High Country SMA, Salt Creek area, and River Corridor SMA would be preserved and would contribute to landscape level habitat connectivity that connects large areas of habitat such as the Santa Susana Mountains to the south, SOAR open space to the west, and the Los Padres National Forest to the north. At the local project-level scale, the different alternatives would result in similar levels of habitat fragmentation and isolation, even though there are some differences in the amount and location of non-preserve natural and manufactured open space areas (see **Figures 4.14-2** through **4.14-7** in **Section 4.14**, Land Use). For example, the relative amount of development and open space for Potrero Village is somewhat different for each of the alternatives. Overall, Alternatives 2 and 3 would result in the greatest level of habitat fragmentation and isolation because they include the development of the VCC planning area, which would constrain the reach of Castaic Creek east of Commerce Center Drive more than under existing conditions. Alternative 7 would have the least amount of habitat fragmentation and isolation within the general boundaries of the Project area. Although the alternatives differ somewhat in the relative amounts of internal development and open space within the broader development boundary, only the size of the spineflower preserves are considered to be significantly different under the different alternatives, with the total spineflower preserve area being progressively larger with each successive alternative (as seen in **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7).

Although the overall pattern of development within the Project area is similar for the different alternatives, dispersal of plant species by wind and water transport or wildlife vectors along existing drainages within the Project area, such as along the Santa Clara River, Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, and Castaic Creek, is expected to continue after development, albeit in a constrained setting. Implementation of the RMDP includes the construction of bridge crossings over the Santa Clara River and bridge crossings and culverts along tributaries to the River (see **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7). In principle, bridges and culverts are potential physical obstacles to wind and water transport and wildlife vectors for seed and plant material dispersal and movement of plant pollinators. Because culverts tend to be smaller and more confining than bridges, they are more likely to alter normal wind and water flow patterns and to disrupt movement by wildlife vectors and pollinators. For example, some wildlife, such as mule deer, are hesitant to enter dark culverts, but will readily cross under bridges. Also, culverts are more likely to disrupt wind-borne plant dispersal along drainages than bridge structures because of the more confined space. If culverts result in grade separations in the drainage at the inlet and outlets of the culvert, natural low water flows can be disrupted. Therefore, all things being equal, alternatives with relatively more culverts and fewer bridges are likely to have greater long-term effects on vegetation

communities than alternatives with more bridges and correspondingly fewer culverts. As shown in **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7, all of the alternatives would include bridge crossings of the Santa Clara River, ranging from one crossing under Alternative 7 to three crossings under Alternatives 2 and 5. However, because all of the bridges across the Santa Clara River would have large spans and adequate heights for plant and wildlife movement and dispersal, the differences in habitat fragmentation and isolation among the alternatives for these bridges is minimal. **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7, also shows the proposed number of bridges and culverts along the tributaries. Generally, progressing from Alternative 2 to Alternative 7, the number of bridges increases and the number of culverts decreases. From the perspective of maintaining continuous habitat connections along the tributary drainages, Alternative 2 would have the greatest habitat fragmenting and isolating effect and Alternative 7 would have the least effect. Also related to habitat fragmentation and isolation is the linear feet of preserved tributary drainage. **Table 4.5-24**, Comparison of RMDP Infrastructure Impacts and Spineflower Preserves for Alternatives 2 through 7, shows that from Alternative 2 to Alternative 7 there is a progressive increase in the linear feet of preserved drainage within the entire RMDP planning area. Alternatives 2 through 6 are fairly similar, ranging from 125,802 linear feet of preserved drainage for Alternative 2 to 139,659 linear feet for Alternative 6, an 11% increase. Alternative 7 would preserve 214,747 linear feet of drainage, a 71% increase over Alternative 2 and a 54% increase over Alternative 6.

An important factor contributing to internal habitat fragmentation and isolation is the circulation system associated with each build-out scenario under the different alternatives. Apart from the constraining effects of culverts under roads, the roads themselves may preclude or inhibit the movement of wildlife vectors and pollinators. The main roads that could contribute to habitat fragmentation and isolation where they cross movement corridors are Commerce Center Drive, Potrero Canyon Road, Long Canyon Road, and Magic Mountain Parkway. These four roads would all be constructed to varying design requirements under all of the alternatives.

Potrero Canyon Road to some extent would be constructed under all of the alternatives, but only under Alternatives 2, 5, and 6 would the road extend north to cross the Santa Clara River *via* a large bridge. Under these alternatives, Potrero Canyon Road could isolate pollinators near the Potrero Preserve Area and potentially affect upland movement of wildlife vectors between Potrero Canyon and Salt Creek (although the River corridor would also allow for such movement). Under Alternatives 3, 4, and 7, Potrero Canyon Road would terminate well south of the Potrero Preserve Area and wetlands mitigation areas and not cause habitat fragmentation and isolation in this area.

Long Canyon Road would be constructed under all of the alternatives. Although the road primarily would be bordered by manufactured open space, it would cross Long Canyon, which would continue to have habitat connectivity function, albeit constrained. The crossing of Long Canyon under all of the alternatives would be a soft bottomed arched culvert, except for Alternative 7, which would have a bridge crossing. The culvert design would likely result in a greater risk of disrupting water flows, wind-borne seed and plant material dispersal, wildlife vector movement, and pollinator movement.

Magic Mountain Parkway also would be constructed under all of the alternatives and would cross Long Canyon and Lion Canyon, which provide a habitat connection to open space south of the Specific Plan area. Although the road primarily would be bordered by residential development, it potentially could affect habitat connectivity along Long Canyon and Lion Canyon. The crossing of Long Canyon by Magic Mountain Parkway under all of the alternatives would be a 400-foot-long road fill with a soft bottomed arched culvert, except for Alternative 7, which would have a bridge crossing. The culvert design alternative would result in a greater risk of disrupting water flows, wind-borne seed and plant material dispersal, wildlife vector movement, and pollinator movement.

Commerce Center Drive would be constructed under Alternatives 2, 3, 4, and 5. The most important biological resource east of Commerce Center Drive is the Airport Mesa Preserve Area. Under Alternative 2, one large core area of spineflower would be in the preserve east of the road. Under Alternatives 3 and 4, two patches (the large core area and a smaller patch) would be in the preserve east of the road. Under Alternative 5, the two patches east of the road would be in the preserve, as would an additional two small patches west of the road. Under Alternative 5, Commerce Center Drive would isolate the two westerly patches from the two easterly patches, resulting in a risk of disrupting wind-borne seed and plant material dispersal, wildlife vector movement, and pollinator movement. Under Alternative 6 (without Commerce Center Drive) these four patches would all be combined into a single non-fragmented preserve area. Under Alternative 7 all the patches would be preserved but not as a single, integrated spineflower preserve area.

Hydrologic Alterations. Long-term hydrologic alterations, such as flow rates and patterns in streams and rivers due to increased urban and storm runoff, dewatering, or other causes, may affect aquatic, wetland, and riparian vegetation communities and habitats under all of the alternatives. These hydrologic alterations could also affect aquatic-dependent fish and wildlife resources during episodic flooding events where the depth and rate of flow could impact their ability to access suitable high-water refugia. ENTRIX (2009) evaluated the impacts of these hydrologic alterations to special-status fish species, discussed in greater detail in **Subsection 4.5.5.3**.

Section 4.1, Surface Water Hydrology and Flood Control, provides a description of the surface water hydrology within the Project area and evaluates the potential secondary surface water hydrology and flood control impacts resulting from the different alternatives. The different alternatives were evaluated in the context of two significance criteria related to hydrologic alterations. Impacts to hydrology would be significant if implementation of the proposed Project or its alternatives would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; and/or
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

In comparison to existing conditions, all alternatives would result in some reduction in floodplain acreages at the different interval flow events (*e.g.*, 2-, 5-, 10-year storm events) (see **Section 4.1**, Surface Water Hydrology and Flood Control, for details). River flows would be impacted by proposed improvements that would reduce the area of the estimated floodplain during less frequent, larger flood events. To prevent flooding, all alternatives include bank stabilization that is designed to contain and convey the FEMA 100-year flood event and the DPW capital flood event. Based on the hydrologic model results (PACE 2009), the Project improvements under all alternatives would not be subjected to significant flooding impacts. Under all alternatives the proposed improvements do not impact storm flows in the Santa Clara River because these improvements are designed to accommodate the flows associated with the 2-, 5-, 10-, 20-, 50-, and 100-year flood events under the proposed conditions for each alternative. In addition, no storm flows are diverted from or to the River as a result of the Project under any alternative, and no drainage tributary to the River will be prevented from flowing to the River in the proposed Project condition under any alternative.

Under all alternatives, runoff within the major tributaries would be conveyed through both engineered, soft-bottom channels and underground stormwater conveyance infrastructure. The engineered channels would be designed to convey both the 100-year and capital flood events in accordance with DPW requirements. Regarding the underground stormwater conveyance infrastructure, the design of these storm drains would comply with DPW requirements for "Storm Drains and Urban Flood Protection" and would incorporate project design features (PDFs) specified in the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan (Geosyntec 2008) to minimize flood hazards. The final design of storm drains would be evaluated and approved by

DPW during Village-level review. Final design would be compliant with DPW requirements for storm drains and urban flood protection (County of Los Angeles 1993).

Increases in the volume of debris from the Project area on downstream areas could result in secondary flood hazards downstream of the Project area under all of the alternatives. However, the planned debris basins would be designed to comply with DPW requirements and would incorporate project design features outlined in the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan (Geosyntec 2008) to balance runoff and sediment loading to Project tributaries and the Santa Clara River. The adequacy of final designs for the debris basins would be assessed by DPW during Village-level review.

The analysis presented in **Section 4.1**, Surface Water Hydrology and Flood Control, determined that the potential secondary surface water hydrology and flood control impacts on the Santa Clara River and tributaries resulting from all of the alternatives were adverse but not significant (see summary in **Table 4.1-18** for the Santa Clara River and **Table 4.1-19** for tributaries).

Geomorphic Alterations. **Section 4.2**, Geomorphology and Riparian Resources, provides an overview of the existing conditions for geomorphic and riparian resources and evaluates the potential direct, indirect, and secondary hydraulic impacts on sensitive aquatic/riparian resources in the Santa Clara River corridor and tributaries due to implementation of the proposed Project. Geomorphic processes include sediment production, transport, and storage through the River corridor. River geomorphology includes the changes (natural or otherwise) to the landscape and within the floodplain that can cause a variety of adverse or beneficial outcomes. These geomorphic alterations could also affect aquatic-dependent fish and wildlife resources during episodic flooding events where the depth and rate of flow could impact their ability to access suitable high-water refugia. ENTRIX (2009) evaluated the impacts of these geomorphic alterations on special-status fish species, discussed in greater detail in **Subsection 4.5.5.3**.

The different alternatives were evaluated in the context of significance criteria derived from Appendix G of the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 *et seq*). Generally, geomorphic impacts would be significant if implementation of the proposed Project or its alternatives would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site.

In order to evaluate the impacts relative to the above significance criterion, the following sub-categories for direct and indirect impacts were used in the analysis presented in **Section 4.2:**

Significance Criterion 1: Project would result in short-term impacts from construction activities that would temporarily change the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;

Significance Criterion 2: Project would result excessive long-term erosion and/or downstream deposition post-Project implementation;

Significance Criterion 3: Project would result in a substantial adverse impact to geomorphic function (*i.e.*, channel stability); and

Significance Criterion 4: Project would result in excessive scouring of established or revegetated riparian vegetation.

In addition, the following sub-category was used for the analysis of secondary impacts resulting from the implementation of the Project:

Significance Criterion 5: Project would result in a substantial reduction of sand transported to Ventura County beaches.

The analysis presented in **Section 4.2** made the following conclusions for the Santa Clara River and its tributaries relative to these significance criteria for Alternatives 2 through 7:

1. Installation of bank stabilization features and bridge piers and abutments would directly impact geomorphic elements of the Santa Clara River and its tributaries, including alterations of the River and tributaries in a way that would cause substantial erosion, resulting in significant impacts, absent mitigation, under Alternatives 2 through 7 (significance criterion 1).

   Construction of the Specific Plan, VCC, and Entrada planning areas (particularly site clearing and grading operations) would have the potential for discharging sediment downstream during storm events, resulting in significant impacts, absent mitigation, under Alternatives 2 through 7 (significance criterion 1).

2. Implementation of the RMDP improvements and facilities would have the potential for discharging sediment downstream during storm events, which may result in substantial erosion and deposition and could result in significant impacts

downstream, absent mitigation, under Alternatives 2 through 7 (significance criterion 2).

The drainage areas in which the Specific Plan, VCC, and Entrada planning areas occur would not be completely developed; therefore, storm flows from the upper reaches would contain sediment and vegetative debris. The amount of sediment and debris contained in the storm flows would be dependent upon the size of the area being drained and whether or not the area had been subject to recent burning. If this debris enters and clogs on-site drainages, upstream flooding could occur, which would be a significant impact, absent mitigation, under Alternatives 2 through 7 (significance criterion 2).

3. The proposed RMDP improvements and facilities would have limited and localized hydromodification impacts to the Santa Clara River. Under moderate storm runoff events, localized increases in flow quantity and velocity would be present at drainage outlet facilities along the banks of the Santa Clara River. These events, however, would be of short duration (temporary) and limited in comparison to periodic channel disturbances caused by Santa Clara River flows from upstream, as described by Balance Hydrologics (2005). The estimated change in hydraulic characteristics under the proposed RMDP to the Santa Clara River would be relatively minor, and, thus, these impacts are considered to be adverse but not significant under Alternatives 2 through 7 (significance criterion 3).

   The proposed tributary drainage treatments incorporate hydromodification controls that lessen potential stormwater-related impacts (intensity and duration) to the River, including buried storm drains, partially open channels, and relocated stream alignments. These impacts are considered to be significant, absent mitigation under Alternatives 2 and 4 and adverse but not significant under Alternatives 3, 5, 6, and 7 (significance criterion 3).

   Potential indirect hydromodification impacts to the Santa Clara River and tributaries include stream corridor disturbances from build-out of the Project area and associated increased runoff intensity, and the sediment transport regime from the urbanized tributary drainages. These impacts are considered to be significant, absent mitigation, under Alternatives 2 through 7 (significance criterion 3).

4. Installation of bank stabilization features, bridges, and turf-reinforced mats would not cause significant scouring, and, therefore, would not alter the amount and pattern of riparian habitats in the River in the Project area. The current pattern of scouring due to high velocities would remain intact. These impacts were considered to be adverse but not significant under Alternatives 2 through 7 (significance criterion 4).

Impacts to riparian vegetation within the tributaries located within the RMDP boundary are primarily associated with the physical alterations to the stream channels and are considered to be significant, absent mitigation, for Alternatives 2, 4, and 5, and adverse but not significant for Alternatives 3, 6, and 7 (significance criterion 4).

5. The effects of the implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas on beach replenishment are a function of the sediment load delivered through the Project reach. The Santa Clara River contributes approximately 60% of beach sand within Ventura County. The reduction of area subject to erosion could result in a relative reduction of floodwater sediment, which could negatively impact beaches, as incrementally less sediment would be available for their replenishment. The geomorphic analysis estimated an approximately 0.02% decrease from the current sediment supply as a result of the Project and concluded that this impact would be adverse but not significant (significance criterion 5).

All of the impacts considered to be significant, absent mitigation, are mitigable to a level that is adverse but not significant. **Subsection 4.2.6** describes the mitigation measures that will be implemented to reduce the significant impacts to geomorphic processes, including measures from the Specific Plan EIR (County of Los Angeles 2003A) and additional measures proposed by this EIS/EIR.

Water Quality. **Section 4.4**, Water Quality, provides an overview of the existing conditions for surface water and groundwater quality and evaluates the potential direct, indirect, and secondary impacts to surface water in the Santa Clara River corridor and tributaries and groundwater quality under the different alternatives. Surface water pollutants of concern identified for the Project area include sediments (total suspended solids (TSS) and turbidity), nutrients (ammonia, nitrite, nitrate, total nitrogen, and total phosphorus), trace metals (aluminum, copper, lead, and zinc), chloride, pathogens (fecal coliform, viruses, and protozoa), petroleum hydrocarbons (oil and grease and Polycyclic Aromatic Hydrocarbons (PAHs), pesticides, trash and debris, Methylene blue activated substances (MBAS), cyanide, and bioaccumulation (see **Table 4.4-11** in **Section 4.4**, Water Quality, for details).

The different alternatives were evaluated in the context of three significance criteria related to water quality. Impacts to water quality would be significant if implementation of the proposed Project or its alternatives would:

- Violate any water quality standards or waste discharge requirements;
- Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- Otherwise substantially degrade water quality.

The Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan (Geosyntec 2008) summarizes the water quality PDFs that would be incorporated into the Project under all of the alternatives to meet all relevant federal, state, and local regulations and policies (see **Subsection 4.4.3.1**, Regulatory Setting). These PDFs include site design, source control, and treatment control BMPs incorporated into the Project to effectively manage wet-weather and dry-weather water quality by limiting or managing pollutant sources. Site design and source control BMPs are practices implemented to minimize runoff and the introduction of pollutants in stormwater runoff. Treatment controls are implemented to remove pollutants once they have been mobilized by runoff (see **Table 4.4-12** in **Section 4.4**, Water Quality, for details).

A comprehensive water quality analysis for Alternative 2 is presented in **Section 4.4** (see **Subsection 4.4.5.2.7**, Total Impacts—Alternative 2). This analysis concluded that comprehensive site design, source control, and treatment control strategy, and full compliance with regulatory requirements would assure that potential long-term direct and indirect impacts from RMDP and SCP maintenance activities and Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada areas build-out on receiving water quality would not be significant after this mitigation under the significance criteria listed above. This analysis also found that the long-term secondary impacts to water quality in the Santa Clara River and groundwater would be reduced to an adverse but not significant level. All of the other alternatives would have reduced RMDP improvements and reduced levels of build-out in the Project area compared to Alternative 2, and, therefore, potential water quality impact under Alternatives 3 through 7 would also be adverse but not significant.

Other Landscape-Scale Long-Term Secondary Impacts. There are several additional landscape-scale long-term secondary impacts on vegetation communities that would be common to all of the alternatives and would likely have a similar level of impact.

- Alterations in wildfire regimes, including shorter fire intervals in some areas due to accidental and intentional ignitions, and long fire intervals where wildfires are suppressed are likely to occur as a result of build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and the Entrada planning areas. The long-term effect of shorter fire intervals could be the permanent transition of shrublands (scrubs and chaparral) to annual grasslands. This transition may be facilitated by habitat

fragmentation of small habitat patches in natural open space areas within the general Project boundaries as discussed above because colonization of the sites by native plant species may be precluded or inhibited.

- Air pollution resulting in increased nitrogen deposition, which, in turn, facilitates the growth of non-native plants would be similar for all of the alternatives.
- Increased human activity in open space areas, including permitted recreational use of trails by humans and their pets, and unauthorized impacts, including trespass, vandalism, illegal shooting and hunting, motorized and non-motorized off-road vehicles, trampling of vegetation, soil compaction, and trash dumping would be similar for all of the alternatives.
- The potential for invasive plant species that affect streams and rivers, including giant reed, tamarisk, and pampas grass would be similar for all of the alternatives.

Edge Effects. Potential long-term development-related secondary impacts operating at the open space–development interface, or edge, include:

- Microhabitat changes along habitat edges due to increased wind and solar exposure or vegetation thinning and/or irrigation in fuel modifications zones;
- Invasive plant species that thrive in edge habitats;
- Increased moisture regimes at habitat edges that attract invasive animal species, such as Argentine ant, and subsequent impacts on native species, including seed dispersers and pollinators of native plants;
- Trampling of vegetation and compaction of soils, affecting the viability of plant communities and certain species; and
- Herbicides that may be directly toxic to native plant species.

Long-term development-related impacts at both the landscape scale and along the open space–development interface generally would be similar for implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and the Entrada planning areas under the six alternatives, but would differ in degree among the alternatives. Alternative 7, in particular, would have fewer secondary edge effects along the Santa Clara River Corridor SMA because of the reduced impacts to agricultural areas adjacent to the River in Landmark Village and Homestead Village East. Because VCC would not be constructed under Alternatives 4, 5, 6, and 7, those alternatives would not have edge effects along Castaic Creek compared to Alternatives 2 and 3. All of the alternatives have the same planned development land use plan along the interface of Potrero Village and the High Country SMA and Salt Creek area.

4.5.5.2.3.2 *Impacts to Vegetation Communities and Land Covers*

Implementation of the proposed Project would result in the direct permanent and temporary loss of, indirect permanent loss of, and secondary impacts to, both common and special-status plant communities (see **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, for a discussion of direct, indirect, and secondary impacts). Some of the plant communities in the RMDP and SCP study areas have widespread distributions, are common, and are both locally and regionally abundant. As described in **Subsection 4.5.3.3**, Existing Conditions by Project Planning Area, the vegetation communities present in the RMDP and Specific Plan area vary in quality from high biological value riparian and upland habitat to highly disturbed land, such as agricultural areas and graded oil well pads (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers).

Upland vegetation communities dominate the landscape within the RMDP and SCP study areas, both north and south of the Santa Clara River, and would be the largest area subject to project disturbance. The dominant upland vegetation communities in these areas include coastal scrub (and alliances and associations), chaparral and associations, coast live oak woodland, mixed oak woodland and valley oak/grass, and California annual grasslands. Man-made land covers agriculture and disturbed land also occur in many upland areas and are bordered by various coastal scrub communities.

Riparian communities are equally well represented in the proposed Project area. For example, southern cottonwood–willow riparian forest, river wash, and herbaceous wetlands vegetation communities comprise the majority of the land in the Santa Clara River Corridor. Many of the tributaries that occur in the project area also support riparian and scrub communities.

Direct permanent and temporary impacts to existing vegetation communities and land covers resulting from implementation of the proposed RMDP, along with indirect permanent impacts caused by the build-out of the Specific Plan, VCC, and Entrada planning areas are presented in **Table 4.5-27**. **Figures 4.5-33-A1** through **4.5-38-D2** depict the vegetation communities that would be subject to project disturbance for Alternatives 2 through 7.

Although each riparian and upland vegetation community and land cover is analyzed separately below in order to be comprehensive, the impact analysis review is organized by category: Riparian Communities; California Annual Grasslands, Agriculture, Disturbed Land, and Developed Land; Coastal Scrub Communities; Chaparral Communities; Oak Woodland and Forest Communities; Purple Needlegrass; and California Walnut Woodland. As part of the significance finding, the value of each vegetation community or land cover as wildlife habitat for special-status species is also considered, and the mitigation strategy is discussed. The full text for proposed mitigation measures is provided in **Subsection 4.5.6**, Mitigation Measures. Illustrative lists of special-status species using the different vegetation communities and land covers are provided where relevant; these lists are not intended to be comprehensive or

exhaustive. Special-status species impacts under Alternatives 2 through 7 are analyzed in **Subsection 4.5.5.3**, Impacts to Special-Status Species.

Construction effects to vegetation communities may occur in a variety of ways, including the direct removal of plants during the course of construction or from secondary effects including the spread or colonization of exotic species, increased fire frequency, or human trampling in edge areas. Clearing and grading associated with the construction of RMDP facilities or the build-out of the Specific Plan, VCC or Entrada planning areas may also result in the alteration of soil conditions, including the loss of native seed banks and changes to the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired. Construction may also result in the creation of conditions that are favorable for the invasion of weedy exotic species that prevent the establishment of desirable vegetation and may adversely affect wildlife. Some ecosystems are especially sensitive to ground disturbance and can take decades to recover, if at all. For example, clearing or substantial pruning of oak woodlands may take decades to functionally recover to pre-construction conditions.

For the purposes of this analysis it is important to note that the implementation of the RMDP and the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the large scale land use conversion from existing uses to developed parcels. This would involve the permanent removal of vegetation to accommodate the proposed development. While one component of the development would include designated open areas and buffers, the implementation of the Project would ultimately result in the loss of existing vegetation communities in many areas. To mitigate for the loss of existing land uses and conversion to developed land, a series of mitigation measures would be implemented to reduce the effects of the permanent loss of vegetation communities. In addition, a series of mitigation measures would be implemented to reduce the effects of temporary and secondary impacts to remaining vegetation communities. The specific measures to be employed and the rationale for their success are described below.

Permanent loss of non-native vegetation communities (California annual grassland and giant reed) and man-made land covers (agriculture, disturbed land, and developed areas) would also occur as a result of habitat restoration and enhancement activities associated with implementation of the SCP and with proposed mitigation measures.

A detailed description of the specific types of effects that may occur to vegetation is located in **Section 4.5.5.1**, Impact Analysis Approach and Methods.

Table 4.5-27
Impacts of the Proposed Project to Vegetation Communities and Land Covers

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	Alternative Number	RMDP Direct Perm	RMDP Direct Temp	Specific Plan Indirect Perm	VCC Indirect Perm	Entrada Indirect Perm	Total Acres on Site	Total Perm Impacts	Total Temp Impacts	Percent Permanently Impacted
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	**2**	24	9.7	955	64	23	2,300	1,067	9.7	46.4%
				3	32	14	898	64	4.0	2,300	998	14	43.4%
				4	24	10	907	0.0	4.0	2,300	935	10	40.7%
				5	42	16	877	0.0	3.6	2,300	922	16	40.1%
				6	66	18	845	0.0	0.9	2,300	911	18	39.6%
				7	19	55	719	0.0	3.0	2,300	741	55	32.2%
	Native Grassland	Purple needlegrass	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0%
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	**2**	11.1	1.1	698	32	38	1,624	779	1.1	48.0%
				3	9.4	1.1	640	32	38	1,624	719	1.1	44.3%
				4	9.4	0.8	637	0.0	38	1,624	683	0.8	42.1%
				5	13.6	2.0	620	0.0	31	1,624	665	2.0	40.9%
				6	6.0	3.1	504	0.0	31	1,624	541	3.1	33.3%
				7	5.7	3.7	464	0.0	35	1,624	505	3.7	31.1%
	Burned California sagebrush scrub			**2**	5.5	0.6	23	0.0	0.0	1,469	29	0.6	2.0%
				3	5.4	0.6	23	0.0	0.0	1,469	29	0.6	2.0%
				4	5.4	0.6	23	0.0	0.0	1,469	29	0.6	2.0%
				5	5.4	0.6	11	0.0	0.0	1,469	16	0.6	1.1%
				6	5.5	0.6	23	0.0	0.0	1,469	29	0.6	2.0%
				7	3.6	0.6	7.5	0.0	0.0	1,469	11	0.6	0.8%
	California sagebrush–*Artemisia californica*			**2**	3.3	0.2	53	0.0	3.1	86	59	0.2	69.3%
				3	2.7	0.2	49	0.0	3.1	86	55	0.2	63.7%
				4	2.6	0.2	49	0.0	3.1	86	55	0.2	63.9%
				5	2.5	0.2	50	0.0	2.0	86	54	0.2	63.3%
				6	3.1	0.4	38	0.0	1.9	86	43	0.4	49.7%
				7	2.4	1.1	40	0.0	3.3	86	45	1.1	52.8%
	California sagebrush–purple sage			**2**	2.9	0.0	194	0.0	0.0	394	196	0.0	49.9%
				3	3.0	0.3	194	0.0	0.0	394	197	0.3	50.0%
				4	3.0	0.0	194	0.0	0.0	394	197	0.0	50.1%
				5	3.5	0.8	192	0.0	0.0	394	195	0.8	49.7%
				6	4.6	1.0	141	0.0	0.0	394	146	1.0	37.0%
				7	1.5	2.2	116	0.0	0.0	394	118	2.2	29.9%

Table 4.5-27
Impacts of the Proposed Project to Vegetation Communities and Land Covers

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	Alternative Number	RMDP Direct Perm	RMDP Direct Temp	Specific Plan Indirect Perm	VCC Indirect Perm	Entrada Indirect Perm	Total Acres on Site	Total Perm Impacts	Total Temp Impacts	Percent Permanently Impacted
			Disturbed California sagebrush–purple sage	**2**	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.7%
		California sagebrush–black sage scrub	California sagebrush–black sage	**2**	1.8	0.2	107	0.0	0.0	196	109	0.2	55.4%
				3	1.9	0.7	106	0.0	0.0	196	108	0.7	55.1%
				4	2.0	0.2	107	0.0	0.0	196	109	0.2	55.3%
				5	2.1	0.7	106	0.0	0.0	196	108	0.7	55.0%
				6	1.1	0.9	91	0.0	0.0	196	92	0.9	46.7%
				7	1.9	1.3	99	0.0	0.0	196	101	1.3	51.3%
		California sagebrush–California buckwheat scrub	Not mapped to association level	**2**	3.9	0.2	157	6.0	88	414	255	0.2	61.6%
				3	3.8	1.6	156	6.0	73	414	239	1.6	57.7%
				4	3.8	0.2	156	0.0	73	414	233	0.2	56.3%
				5	3.8	1.6	152	0.0	64	414	220	1.6	53.1%
				6	4.0	1.6	129	0.0	46	414	179	1.6	43.3%
				7	1.9	0.9	118	0.0	73	414	192	0.9	46.4%
		California sagebrush scrub–undifferentiated chaparral	Not mapped to association level	**2**	1.9	0.1	88	0.0	0.0	135	90	0.1	66.6%
				3	1.6	0.1	89	0.0	0.0	135	90	0.1	66.9%
				4	2.0	0.1	89	0.0	0.0	135	91	0.1	67.1%
				5	1.5	0.1	89	0.0	0.0	135	91	0.1	67.1%
				6	3.7	0.1	83	0.0	0.0	135	87	0.1	64.4%
				7	1.5	2.6	52.2	0.0	0.0	135	54	2.6	39.8%
			Burned California sagebrush scrub–undifferentiated chaparral	**2**	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0%
		Coyote brush scrub	Not mapped to association level	**2**	0.6	0.0	6.2	0.0	0.0	9.2	6.7	0.0	73.0%
				3	0.6	0.0	6.2	0.0	0.0	9.2	6.7	0.0	73.0%
				4	0.6	0.0	6.2	0.0	0.0	9.2	6.7	0.0	73.0%
				5	0.6	0.0	6.2	0.0	0.0	9.2	6.7	0.0	73.0%
				6	0.6	0.0	6.2	0.0	0.0	9.2	6.7	0.0	73.0%
				7	0.2	0.0	5.8	0.0	0.0	9.2	6.1	0.0	65.7%

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	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	**2**	21	0.9	378	0.0	25	1,131	423	0.9	37.3%
				3	20	0.9	364	0.0	25	1,131	408	0.9	36.1%
				4	20	0.9	357	0.0	25	1,131	400	0.9	35.4%
				5	20	0.9	358	0.0	24	1,131	402	0.9	35.5%
				6	17	0.9	356	0.0	24	1,131	397	0.9	35.1%
				7	16	8.0	280	0.0	25	1,131	321	8.0	28.4%
			Burned undifferentiated chaparral	**2**	4.1	0.7	6.3	0.0	0.0	957	11	0.7	1.1%
				3	4.1	0.7	6.3	0.0	0.0	957	11	0.7	1.1%
				4	4.1	0.7	6.3	0.0	0.0	957	11	0.7	1.1%
				5	4.1	0.7	6.3	0.0	0.0	957	11	0.7	1.1%
				6	4.1	0.7	6.3	0.0	0.0	957	11	0.7	1.1%
				7	4.1	0.7	6.2	0.0	0.0	957	10	0.7	1.1%
	Chaparral with Chamise	Chamise chaparral	Not mapped to association level	**2**	1.6	0.0	22	0.0	0.0	56	24	0.0	42.6%
				3	1.5	0.2	22	0.0	0.0	56	24	0.2	42.6%
				4	3.3	0.0	20	0.0	0.0	56	24	0.0	42.6%
				5	3.3	0.2	20	0.0	0.0	56	24	0.2	42.6%
				6	3.3	0.2	20	0.0	0.0	56	23	0.2	41.3%
				7	0.6	0.4	16	0.0	0.0	56	16	0.4	29.5%
	Chaparral with Oak	Scrub oak chaparral	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
	Other Scrubs	Eriodictyon scrub	Not mapped to association level	**2**	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	100.0%
				3	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	100.0%
				4	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	100.0%
				5	0.0	0.0	0.2	0.0	0.0	0.2	0.2	0.0	100.0%
				6	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	8.0%
				7	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0%
Broad Leafed Upland Tree Dominated	Upland Walnut Woodland and Forest	California walnut woodland and forest	California walnut woodland	**2**	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	27	0.0	0.0	0.0%

Table 4.5-27
Impacts of the Proposed Project to Vegetation Communities and Land Covers

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	Alternative Number	RMDP Direct Perm	RMDP Direct Temp	Specific Plan Indirect Perm	VCC Indirect Perm	Entrada Indirect Perm	Total Acres on Site	Total Perm Impacts	Total Temp Impacts	Percent Permanently Impacted
	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	**2**	8.3	1.2	60	0.0	0.0	758	68	1.2	9.0%
				3	8.5	1.2	51	0.0	0.0	758	59	1.2	7.8%
				4	8.0	1.2	49	0.0	0.0	758	57	1.2	7.6%
				5	12.1	1.2	50	0.0	0.0	758	63	1.2	8.3%
				6	16	1.2	30	0.0	0.0	758	46	1.2	6.0%
				7	4.6	13	30	0.0	0.0	758	35	13	4.6%
		Mixed oak woodland and forest	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	169	0.0	0.0	0.0%
		Valley oak forest and woodland	Valley oak woodland	**2**	0.8	0.1	4.7	0.0	0.0	79.4	5.5	0.1	6.9%
				3	0.8	0.1	4.3	0.0	0.0	79.4	5.0	0.1	6.4%
				4	0.8	0.1	4.3	0.0	0.0	79.4	5.0	0.1	6.4%
				5	0.8	0.1	4.3	0.0	0.0	79.4	5.0	0.1	6.4%
				6	0.8	0.1	0.3	0.0	0.0	79.4	1.1	0.1	1.4%
				7	0.8	0.1	3.3	0.0	0.0	79.4	4.1	0.1	5.2%
			Valley oak/grass	**2**	0.2	0.0	21	0.0	0.0	461	21	0.0	4.5%
				3	0.2	0.0	11	0.0	0.0	461	11	0.0	2.5%
				4	0.2	0.0	11	0.0	0.0	461	11	0.0	2.5%
				5	0.2	0.0	11	0.0	0.0	461	11	0.0	2.5%
				6	2.0	0.0	10	0.0	0.0	461	12	0.0	2.6%
				7	0.2	0.0	11	0.0	0.0	461	11	0.0	2.5%
Bog and Marsh	Marsh	Bulrush–cattail wetland	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0%
		Cismontane alkali marsh	Not mapped to association level	**2**	9.7	0.0	1.4	0.0	0.0	19	11	0.0	59.8%
				3	6.4	0.4	0.0	0.0	0.0	19	6.4	0.4	34.6%
				4	5.9	0.3	0.6	0.0	0.0	19	6.5	0.3	35.1%
				5	6.4	0.6	0.0	0.0	0.0	19	6.4	0.6	34.6%
				6	6.4	0.5	0.0	0.0	0.0	19	6.4	0.5	34.6%
				7	0.3	1.0	0.0	0.0	0.0	19	0.3	1.0	1.4%

Table 4.5-27
Impacts of the Proposed Project to Vegetation Communities and Land Covers

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	Alternative Number	RMDP Direct Perm	RMDP Direct Temp	Specific Plan Indirect Perm	VCC Indirect Perm	Entrada Indirect Perm	Total Acres on Site	Total Perm Impacts	Total Temp Impacts	Percent Permanently Impacted
		Fresh–brackish water marsh	Coastal and valley freshwater marsh	**2**	1.6	0.0	0.3	0.0	0.0	2.0	2.0	0.0	100%
				3	1.1	0.5	0.0	0.0	0.0	2.0	1.1	0.5	56.7%
				4	1.1	0.4	0.2	0.0	0.0	2.0	1.3	0.4	66.3%
				5	1.1	0.8	0.0	0.0	0.0	2.0	1.1	0.8	57.3%
				6	1.2	0.3	0.0	0.0	0.0	2.0	1.2	0.3	60.1%
				7	0.0	0.2	0.0	0.0	0.0	2.0	0.0	0.2	1.6%
Riparian and Bottomland Habitat	Other Riparian/Wetland	Herbaceous wetland	Not mapped to association level	**2**	1.1	4.3	0.1	0.6	0.0	184	1.9	4.3	1.0%
				3	0.7	3.9	0.0	0.6	0.0	184	1.3	3.9	0.7%
				4	0.7	3.9	0.0	0.0	0.0	184	0.7	3.9	0.4%
				5	1.1	4.4	0.0	0.0	0.0	184	1.1	4.4	0.6%
				6	0.8	3.8	0.0	0.0	0.0	184	0.8	3.8	0.4%
				7	0.5	3.1	0.0	0.0	0.0	184	0.5	3.1	0.3%
		River wash	Not mapped to association level	**2**	21	38	15	16	3.4	332	56	38	16.8%
				3	19	42	13	16	0.4	332	48	42	14.3%
				4	20	37	15	0.0	0.4	332	35	37	10.6%
				5	1.1	4.4	0.0	0.0	0.0	332	1.1	4.4	0.6%
				6	15	40	7.4	0.0	0.3	332	23	40	6.9%
				7	4.8	33	5.6	0.0	0.1	332	10	33	3.1%
		Alluvial scrub	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.5	1.5	0.5	0.0	35.7%
				3	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.5	1.5	0.5	0.0	35.7%
				6	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0%
		Big sagebrush scrub	Not mapped to association level	**2**	24	5.2	35	0.0	12	91	70	5.2	76.7%
				3	22	6.2	32	0.0	1.3	91	56	6.2	61.4%
				4	22	5.1	31	0.0	1.3	91	54	5.1	59.2%
				5	22	6.6	28	0.0	7.2	91	57	6.6	62.3%
				6	16	6.5	17	0.0	0.0	91	32	6.5	35.4%
				7	2.6	21	7.8	0.0	1.5	91	12	21	13.0%
		Big sagebrush scrub	Big sagebrush-California buckwheat	**2**	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%
				3	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%
				4	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%
				5	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%
				6	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%
				7	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.0	18.7%

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		Giant reed	Not mapped to association level	**2**	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0%
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	**2**	2.8	2.3	4.0	0.0	0.0	19	6.8	2.3	36.5%
				3	0.4	4.0	4.0	0.0	0.0	19	4.4	4.0	23.6%
				4	0.4	4.0	4.0	0.0	0.0	19	4.4	4.0	23.6%
				5	1.2	2.9	4.0	0.0	0.0	19	5.2	2.9	28.1%
				6	0.4	3.7	4.0	0.0	0.0	19	4.5	3.7	23.9%
				7	0.8	5.9	1.6	0.0	0.0	19	2.5	5.9	13.3%
		Mexican elderberry	Not mapped to association level	**2**	1.5	0.0	6.1	0.0	0.0	13	7.6	0.0	59.5%
				3	1.5	0.0	5.7	0.0	0.0	13	7.3	0.0	57.0%
				4	1.5	0.0	5.7	0.0	0.0	13	7.3	0.0	57.0%
				5	1.6	0.1	5.6	0.0	0.0	13	7.2	0.1	56.7%
				6	0.9	0.1	4.3	0.0	0.0	13	5.3	0.1	41.2%
				7	0.1	0.2	3.5	0.0	0.0	13	3.6	0.2	28.1%
		Mexican elderberry	Disturbed Mexican elderberry	**2**	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
				3	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
				4	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
				5	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
				6	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
				7	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0	100.0%
		Mulefat scrub	Not mapped to association level	**2**	15.6	8.2	5.9	0.5	0.0	72	22	8.2	30.5%
				3	13.4	10	4.1	0.5	0.0	72	18	10	25.0%
				4	14	8.4	5.0	0.0	0.0	72	19	8.4	26.4%
				5	15	9.2	2.9	0.0	0.0	72	18	9.2	24.3%
				6	16	9.0	1.3	0.0	0.0	72	17	9.0	23.8%
				7	0.8	10	0.6	0.0	0.0	72	1.4	10	1.9%
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	**2**	2.7	4.9	1.0	0.0	0.0	23	3.7	4.9	16.3%
				3	2.0	5.0	0.7	0.0	0.0	23	2.7	5.0	11.9%
				4	2.0	4.9	0.7	0.0	0.0	23	2.7	4.9	12.0%
				5	2.2	5.2	0.5	0.0	0.0	23	2.7	5.2	11.9%
				6	2.1	5.0	0.5	0.0	0.0	23	2.7	5.0	11.7%
				7	0.0	1.7	0.0	0.0	0.0	23	0.0	1.7	0.1%

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		Tamarisk scrub and woodland	Shrub tamarisk	**2**	0.3	0.0	0.1	0.0	0.0	2.8	0.1	0.3	12.3%
				3	0.2	0.1	0.0	0.0	0.0	2.8	0.2	0.1	5.8%
				4	0.3	0.0	0.0	0.0	0.0	2.8	0.3	0.0	9.0%
				5	0.2	0.1	0.0	0.0	0.0	2.8	0.2	0.1	7.9%
				6	0.2	0.1	0.0	0.0	0.0	2.8	0.2	0.1	6.2%
				7	0.0	0.1	0.0	0.0	0.0	2.8	0.0	0.1	0.0%
		Coast live oak forest and woodland	Southern coast live oak riparian forest	**2**	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
				3	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
				4	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
				5	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
				6	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
				7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0%
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	**2**	36	40	2.9	3.9	0.0	422	43	40	10.1%
				3	23	38	2.4	3.9	0.0	422	29	38	6.9%
				4	24	36	2.8	0.0	0.0	422	27	36	6.3%
				5	29	42	2.1	0.0	0.0	422	31	42	7.3%
				6	15	38	0.8	0.0	0.0	422	16	38	3.8%
				7	7.8	22	0.7	0.0	0.0	422	8.5	22	2.0%
Man-Made Land Cover Types		Agriculture	NA	**2**	116	68	1,123	25	0.0	1,617	1,264	68	78.2%
				3	95	93	1,095	25	0.0	1,617	1,215	93	75.1%
				4	92	108	1,099	0.0	0.0	1,617	1,191	108	73.7%
				5	109	83	1,094	0.0	0.0	1,617	1,203	83	74.4%
				6	82	88	999	0.0	0.0	1,617	1,081	88	66.8%
				7	48	289	782	0.0	0.0	1,617	830	289	32.2%
		Developed land	NA	**2**	0.0	0.0	0.3	1.6	0.4	4.7	2.3	0.0	48.6%
				3	0.0	0.0	0.3	1.6	0.4	4.7	2.3	0.0	48.6%
				4	0.0	0.0	0.3	0.0	0.4	4.7	0.7	0.0	14.1%
				5	0.0	0.0	0.3	0.0	0.4	4.7	0.7	0.0	14.1%
				6	0.0	0.0	0.3	0.0	0.4	4.7	0.6	0.0	13.7%
				7	0.0	0.0	0.1	0.0	0.8	4.7	0.9	0.0	18.7%
		Disturbed land	NA	**2**	71	16	780	60	49	1,201	960	16	80.0%
				3	71	25	767	60	42	1,201	940	25	78.3%
				4	63	24	770	0.0	42	1,201	874	24	72.8%
				5	83	19	751	0.0	42	1,201	876	19	73.0%
				6	90	25	664	0.0	39	1,201	793	25	66.1%
				7	45	94	547	0.0	37	1,201	629	94	52.4%

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Total				**2**	394	201	4,749	209	241	14,288	5,594	201	39.1%
				3	350	250	4,545	209	187	14,288	5,291	250	37.0%
				4	335	247	4,549	0.0	187	14,288	5,071	247	35.5%
				5	404	244	4,452	0.0	177	14,288	5,033	244	35.2%
				6	383	249	3,981	0.0	144	14,288	4,508	249	31.5%
				7	175	572	3,317	0.0	178	14,288	3,669	572	25.7%

Implementation of the proposed Project would require construction to occur within a broad array of vegetation communities and land covers. **Subsection 4.5.3.4.1**, Vegetation Communities and Land Cover Types, contains a detailed description of the various vegetation present in the proposed Project area.

Significance Criteria. The effects of a project to any given vegetation community may differ depending on a variety of factors. These include, but are not limited to, the sensitivity of the community (*i.e.*, is the community designated as sensitive by CDFG or other resource agency); the ability of the community to support special-status plants or wildlife; the total acreage lost or affected by the proposed Project; and the physical amount of habitat that remains in the project area at the conclusion of construction. For projects where large scale land conversion occurs the effects of the project must consider how the loss of specific vegetation communities affect both local and regional populations of species that occupy those areas lost through development. **Subsection 4.5.4**, Impact Significance Criteria, contains a detailed discussion of the significance criteria developed for this project.

As described in **Subsection 4.5.4**, Impact Significance Criteria, the consideration of impacts to vegetation communities and land covers falls under the following significance criteria. Biological impacts would be significant if implementation of the proposed Project or its alternatives would (1) Have a substantial adverse effect, either directly or via habitat modifications, on any species designated as candidate or special status by federal, state, or local agencies; (2) Have a substantial adverse effect on any riparian habitat or other special-status natural community identified by federal, local, or state agencies; (5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and (7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

4.5.5.2.3.2.1 Impacts to Vegetation Communities and Land Covers—Alternative 2

Impacts to Riparian Communities

Existing Conditions. Riparian forests are structurally and floristically complex vegetation communities (Roberts *et al.*, 1977). Under ideal conditions, these forests consist of several layers with dense undergrowth (Warner *et al.*, 1984) and are often difficult to characterize as different communities often merge into each other as specific sites undergo succession. The Santa Clara River and its tributaries and portions of the RMDP contain a broad array of early to late successional riparian communities ranging from sand and gravel bars dominated by sandbar willow saplings and cattails to mature

galleries of Fremont cottonwood with complex understories of woody and herbaceous vegetation.

Riparian communities in the proposed Project area are of high sensitivity and biological value. As described in **Subsection 4.5.3.3**, Existing Conditions by Planning Area, the Santa Clara River Corridor and its tributaries supports a variety of special-status plant and wildlife species. Some of the special-status wildlife known to occur includes the arroyo toad, black crowned night-heron, Cooper's hawk, and least Bell's vireo. Northern harrier, white tailed kite, willow flycatcher, yellow warbler, yellow breasted chat, and yellow headed blackbird have also been identified. As many portions of the RMDP support perennial water, several aquatic or semi-aquatic species have been observed including arroyo chub, Santa Ana sucker, unarmored threespine stickleback, southwestern pond turtle, and two striped garter snake. Three special-status plants have been recorded in the River Corridor SMA, and include an undescribed everlasting, an undescribed sunflower, and slender mariposa lily.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Subsection 4.5.5.1, Impact Analysis Approach and Methods, of this EIS/EIR contains a detailed description of the different direct, indirect, and secondary effects that could occur from the implementation of the proposed RMDP and the SCP. **Subsection 4.5.5.1** also provides the reader with a comprehensive description for each of the different impact types and how the impact may affect the vegetation community.

The primary direct effect of the RMDP is the permanent land use conversion of riparian vegetation communities. As described above, construction activities would result in the permanent removal of approximately 116 acres of riparian vegetation communities on site. Implementation of the RMDP would also result in the temporary removal of 103 acres of riparian vegetation communities.

Both permanent and temporary disturbance to vegetation and landcovers would occur from clearing and grading associated with the construction of proposed permanent and temporary haul or access roads, grade control structures, buried bank protection, installation of culverts and other improvements. The temporary loss of riparian vegetation communities would occur where grading or soil disturbance would occur for a short period of time (*e.g.*, along the edges of proposed facilities), but where no permanent structures would be constructed.

Construction within riparian vegetation communities may result in a series of effects including the loss of vegetation and native seed banks; changes to the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired; and the alteration of existing soils. Temporary impacts to riparian vegetation can also result in the displacement of wildlife and increase the potential for exotic plant propagation. Although areas temporarily disturbed by construction would be restored at the conclusion of construction; sediment and vegetation removal in riparian communities would reduce the seed bank and could adversely affect hydric soils. Soils would be impacted during vegetation removal by the direct removal of litter and organic matter along with vegetation, and would result in a reduction of the biomass available as new input to the soil. The removal of sediments would also eliminate soil microbes essential to the reestablishment of wetland plants.

Depending on the type of riparian communities that would be affected by project construction, the restoration time required to restore the functional values of the habitat may take several years to replace. For example, temporary impacts to early successional riparian communities including marsh and river wash communities can respond fairly quickly after a disturbance as these areas are dominated by rapidly colonizing plant species. Some willow scrub communities may also reach habitat functions and services/values in a short period of time as these areas are often subject to annual storm flows and scour events. Conversely, disturbance of southern-cottonwood willow riparian forest or alluvial scrub communities could take several years to functionally recover.

Construction activities that remove native vegetation may also result in the creation of conditions that are favorable for the invasion or spread of weedy exotic species that thrive in riparian areas, such as giant reed and tamarisk. Non-native plants pose a threat to the natural processes of plant community succession, fire frequency, biological diversity and species composition. The survival of some populations of special-status species could be adversely affected by the success of an introduced plant species.

Exotic vegetation has been demonstrated to be more abundant in riparian habitats that are in close proximity to urbanized areas. Studies have shown that riparian bird species richness and density tend to be negatively correlated with exotic vegetation abundance, presumably because exotic plant assemblages fail to provide the necessary structural and nutritional resources that native plant communities provide (Rottenborn 1997 and 1999; Mills *et al.* 1989; Anderson *et al.* 1977). Urbanized areas also tend to support higher concentrations of common disturbance-following species that often displace local species dependent on

riparian habitats. The introduction and spread of non-native plant species normally occurs when vehicles or equipment exposed to populations of noxious weeds in one geographic area inadvertently transport the seeds to another area where lands have been disturbed. Although the region currently supports wide populations of noxious weeds, the introduction of new species not currently present in the region or the spread of noxious plant species across the project area would be considered a significant impact absent mitigation.

Construction activities associated with the development of RMDP facilities (*e.g.*, buried bank protection, levees, bridges, and ancillary structures) would result in the permanent removal of 116 acres and temporary removal of 103 acres of riparian communities on site. These impacts would occur to both woody and herbaceous wetland communities. For example, direct impacts to woody riparian communities would include the permanent/temporary loss of 36/40 acres of southern cottonwood–willow riparian forest; the permanent/temporary loss of 2.7/4.9 acres of southern willow scrub; the permanent/temporary loss of 16/8.2 acres of mulefat scrub; the permanent/temporary loss of 2.8/2.3 acres of arrow weed scrub; the permanent/temporary loss of 24/5.2 acres of big sagebrush scrub; the permanent/temporary loss of 21/38 acres of river wash; the permanent/temporary loss of 0.3/0.0 shrub tamarisk; and the permanent/temporary loss of 1.5/0.0 acres of Mexican elderberry scrub. Permanent and temporary impacts would not occur to alluvial scrub, big sagebrush scrub – California buckwheat, disturbed Mexican elderberry scrub, giant reed, or southern coast live oak riparian forest from implementation of the proposed RMDP. However, because giant reed is an invasive nonnative plant community it is expected that these areas would be revegetated with other native vegetation communities as a result of enhancement and restoration opportunities associated with the River Corridor SMA. In addition, the reestablishment of giant reed would be controlled through the mitigation monitoring period.

Direct losses from implementation of the RMDP to herbaceous communities would include the permanent/temporary loss of 9.7/0.0 acres of cismontane alkali marsh; permanent/temporary loss of 1.6/0.0 of coastal and valley freshwater marsh; permanent/temporary impacts to 1.1/4.3 acres of herbaceous wetland on site. Implementation of the proposed RMDP and SCP would not result in the permanent or temporary removal of bulrush–cattail wetland. Implementation of the SCP would not directly impact any riparian vegetation community. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

As a relative index of the habitat availability on site, approximately 1,189 acres of riparian communities occur in the proposed RMDP project area. Thus, the relative loss of these vegetation communities from direct impacts is approximately 10.0% of the existing riparian communities present in the project area. However, the total percentage of any given community may range from a low of 0% for southern oak riparian forest and giant reed to 51.1% for cismontane alkali marsh. What is important to recognize for all vegetation percentages identified in this report is the total percentage of a vegetation community lost only reflects the percent of the habitat that occurs in the project area. That is, while the total percentage of cismontane alkali marsh affected by the proposed project is high, the total acreage lost is 9.7 acres out of approximately 19 acres that occur on site. Conversely, southern cottonwood-willow riparian forest would be subject to a loss of 8.5% of the existing habitat (a total of 36 acres lost) of the 422 acres of this community that is present in the project area. Further, while there are 754 acres of riparian habitat along the Santa Clara River on site, 11.2% of that habitat will be impacted. By contrast, there are 435 acres of riparian habitat along the tributaries on site, 55.8% of which will be impacted by the proposed Project.

For riparian communities that are present in the Project area the majority of the habitat removal would result from the construction of buried bank protection and the associated RMDP infrastructure. Implementation of the SCP would not result in impacts to riparian vegetation communities.

Significance Finding: Significant absent mitigation for Alternative 2. In California more than 95.0% of riparian habitats that were present prior to European settlement have been severely degraded or destroyed (Smith 1977; Katibah 1984). Although riparian zones naturally account for a low percentage of the total landscape (often less than 1.0%), they typically accommodate a disproportionately high number of species and provide a larger degree of ecological function than surrounding upland areas (Fischer and Fischenich 2000).

Riparian communities support some of the most diverse assemblages of wildlife and provide access to water, shade, and protection from predation. These areas also provide foraging habitat and are used for nesting and breeding by both common and special-status species. The diverse riparian community types that occur in the Santa Clara River and its tributaries provide habitat for a variety of resident and migratory wildlife species including several special status species such as least Bell's vireo, white tailed kite, unarmored three-spine stickleback, and southwestern pond turtle. The broad multi-structured riparian canopy in the Santa Clara River, including dense galleries of cottonwoods, is an important stopover for many migratory birds including the willow flycatcher. In addition, the wide

river channel and adjacent riparian communities function as a movement corridor for a number of wildlife species and provide connectivity from the Simi Hills to areas in both the Los Padres and Angeles National Forests. The tributaries function as movement corridors between the Santa Clara River and upland habitats and provide connectivity between the Los Padres National Forest and the Santa Susana Mountains.

With the exception of exotic plant communities such as shrub tamarisk or giant reed thickets, most riparian communities are considered sensitive by CDFG and are regulated by state and federal laws. However, due to the location of many exotic plant communities in the Santa Clara River or its tributaries (*e.g.*, within state or federal jurisdictional limits) even the loss of those communities would require compensatory mitigation in the form of creation and/or restoration with native vegetation. In addition, in some locations (*e.g.*, the Ventura River and Colorado River) exotic plant communities have been documented to support special-status wildlife including least Bell's vireo and southwestern willow flycatcher. Depending on the location within the Santa Clara River these same species could occupy habitat immediately adjacent to or within the mosaic of riparian communities that are present in the project area.

Based on the presence of special-status plants and wildlife in the Santa Clara River and its tributaries, the implementation of the proposed RMDP has the potential to result in substantial adverse effects on special-status species and habitat that occur in riparian communities. The permanent impacts associated with the construction of infrastructure associated with the RMDP facilities would constitute a substantial adverse effect on the vegetation communities present and would have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Direct Permanent and Temporary Impacts

In order to reduce direct impacts to riparian communities resulting from the implementation of the RMDP, a series of mitigation measures approved for the Specific Plan EIR and additional measures that would be implemented for this project would avoid and/or minimize the effects of Project construction on these resources.

The primary mechanism for mitigating the permanent loss of riparian vegetation communities in the RMDP and SCP study areas is the implementation of mitigation measures designed to replace the habitat functions and services/values

of riparian vegetation communities that were lost through construction and the dedication and maintenance of existing natural lands in the River Corridor SMA, High Country SMA, and Salt Creek area. These mitigation measures would off-set the direct removal of riparian vegetation communities in the project area.

For riparian vegetation communities this includes the direct replacement of riparian communities at a minimum 1:1 ratio for all permanently affected habitats in order to achieve the same habitat functions and services/values that were lost through implementation of the proposed Project. Restoration shall be in kind and at a 1:1 replacement ratio for new vegetation communities if the replacement vegetation is installed two years in advance of the removal of existing vegetation communities. If the replacement vegetation communities cannot be installed prior to the two year period the restoration ratios would increase to ensure the replacement of lost riparian functions and services/values. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Mitigation designed to restore, enhance, or replace temporarily disturbed riparian vegetation communities focuses on achieving the required percent coverage and tree growth performance criteria for the proposed target species, as well as native species recruitment and reproduction. The intent of the restoration is to facilitate the reestablishment of native riparian habitat with a diverse profile (*e.g.*, structure and stratification, and plant species composition) of native plants necessary to provide wildlife nesting, sheltering, and foraging opportunities. General habitat structure and stratification will include the reestablishment of structured riparian strata including an understory composed of native herbaceous species, grass species, and small shrub species; a midstory (or midstories) composed of larger native shrubs and small trees of varying sizes; and an overstory or canopy composed of larger native trees of varying sizes. This should result in the establishment of suitable habitat for a diverse range of wildlife species typical of riparian habitats within the area. Suitable habitat includes opportunities for nesting, sheltering, and foraging by providing a broad diversity in plant species composition and age/size structure with layers of detritus/leaf litter, and dead/fallen wood and vegetative matter.

In order to reduce direct impacts to this vegetation community due to the removal of vegetation, the Project applicant would implement a series of mitigation measures designed to restore the functions and services/values provided by

riparian vegetation communities lost as a result of development. These measures include previously incorporated measures SP-4.6-1 through SP-4.6-16 and SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA; 1:1 riparian resource replacement), SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA), SP-4.6-28 (mitigation banking for various habitat types in the High Country SMA), SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub), SP-4.6-47a (allowing mitigation banking for riparian habitats, oak resources, and Mexican elderberry within the River Corridor SMA, High Country SMA, and Open Area). These impacts would also be reduced through the implementation of Mitigation Measures BIO-1 through BIO-16 (wetlands mitigation plan and riparian restoration activities on the Project site). CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Further protection of vegetation communities would be achieved through the creation of buffers and biologically monitored perimeters during construction periods. Biologically monitored perimeters would limit the potential for the contractor to disturb vegetation outside the proposed construction footprint. The use of these measures would identify the limits of construction and provide a biological monitor to review the construction area in the field with the contractor and be present during initial vegetation clearing and grading. To further reduce the impacts of the proposed RMDP from accidental clearing or trampling of vegetation the applicant would implement previously incorporated Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA); SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the River Corridor SMA and the High Country SMA); and BIO-52 (pre- construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities). Implementation of these measures would reduce these effects to less-than-significant levels.

Following development, continued preservation of the dedicated areas would be accomplished through restricted access and long-term management of the River Corridor SMA, High Country SMA, and Salt Creek area. The use of buffers would limit the potential for the spread of exotic weeds and limit the potential for the spread of wildfires (buffers are described in detail under Secondary Impacts of the Proposed Project). To further reduce the impacts of the proposed Project, the

applicant would implement previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA); and BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). Implementation of these measures would reduce these effects to less-than-significant levels.

Long-term management activities would include the establishment of native vegetation communities in currently disturbed habitat, a reduction in cattle grazing except where grazing may be used as a management tool to control exotics, and the management of exotic species. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA), and SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO). These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to riparian communities. These areas support the same types of habitat that would be lost through construction and would be further enhanced through ongoing restoration and management activities.

In addition, previously adopted mitigation measures from the Specific Plan EIR and mitigation measures proposed for this Project provide mechanisms to restore temporarily disturbed habitat and enhance the habitat within the proposed mitigation lands. **Tables 4.5-13**, **4.5-14**, and **4.5-15** in **Subsection 4.5.3.3**, Existing Conditions by Project Planning Area, provide a breakdown of the vegetation communities and land covers present in the River Corridor SMA, High Country SMA, and Salt Creek area, respectively, that would be used to provide mitigation lands for the proposed RMDP. For this Project, over 169 mitigation measures have been presented to reduce or minimize the effects of the proposed Project on biological resources. **Subsection 4.5.6**, Mitigation Measures, contains the entire list of mitigation measures that would be used to reduce the effects of the proposed Project.

The goal of the mitigation program is to restore the floodplain functions and services/values lost during Project construction as described above by reestablishing riparian and upland (upper terrace) habitat, and to enhance the quality of the Santa Clara River ecosystem. Implementation of the restoration measures described below would restore functional habitat services/values and reduce the effects of the RMDP to less-than-significant levels.

The specific mitigation measures that would be utilized to reduce the direct impacts of the proposed RMDP to a level that is adverse but not significant are identified below in **Table 4.5-28**.

Table 4.5-28
Applicable Mitigation Measures for Direct Impacts to Riparian Vegetation Communities

Mitigation Measure(s)	Issue Mitigating
SP-4.6-1 through SP-4.6-16 (habitat restoration/enhancement in the River Corridor SMA)	Vegetation Removal
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Vegetation Removal
SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA)	Vegetation Removal
SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA)	Vegetation Removal
SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA)	Vegetation Removal
SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA)	Vegetation Removal
SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA)	Vegetation Removal
SP-4.6-28 (mitigation banking for various habitat types in the High Country SMA)	Vegetation Removal
SP-4.6-34 (marking and inspection of grading perimeters prior to impacts within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-35 (avoidance of inadvertent impacts to biological resources within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA)	Vegetation Removal
SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub)	Vegetation Removal
SP-4.6-47a (allowing mitigation banking for riparian habitats, oak resources and Mexican elderberry within the River Corridor SMA, High Country SMA, and Open Area)	Vegetation Removal
SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA; 1:1 riparian resource replacement)	Vegetation Removal
BIO-1 through BIO-16 (wetlands mitigation plan and riparian restoration activities on the Project site)	Vegetation Removal
BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126)	Vegetation Removal
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Vegetation Removal

Table 4.5-28
Applicable Mitigation Measures for Direct Impacts to Riparian Vegetation Communities

Mitigation Measure(s)	Issue Mitigating
BIO-62 (dedication to the public of at least 21,900 acres of Open Area to an NLMO)	Vegetation Removal
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Vegetation Removal
BIO-73 (permanent fencing along trails in the River Corridor SMA)	Vegetation Removal

Indirect Permanent Impacts

Most of the effects to riparian habitat would occur from construction activities associated with the RMDP. Only small areas of riparian vegetation would be affected by the build-out of the Specific Plan, VCC, and Entrada planning areas. The loss of riparian vegetation communities would occur through construction-related activities and the development of residential housing, commercial properties, and infrastructure.

Construction activities associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of approximately 109 acres of riparian vegetation communities. Similar to direct effects, these impacts would occur to both woody and herbaceous wetland communities. Most of the permanent effects would occur to big sagebrush scrub (47 acres), followed by river wash (35 acres), southern cottonwood–willow riparian forest (6.8 acres), mulefat (6.4 acres), Mexican elderberry (6.1 acres), and arrow weed scrub (4.0 acres). Small impacts would also occur to herbaceous wetlands (0.7 acres), cismontane alkali marsh (1.4 acres), southern willow scrub (1.0 acre), shrub tamarisk (0.1 acre), alluvial scrub (0.5 acre), and coastal and valley freshwater marsh (0.3 acre). Indirect permanent impacts would not occur to southern coast live oak riparian forest, giant reed, or bulrush-cattail wetland from the build-out of the Specific Plan, VCC, and Entrada planning areas. However, because giant reed is an invasive nonnative plant community it is expected that these areas would be revegetated with other native vegetation communities as a result of enhancement and restoration opportunities associated with the River Corridor SMA. In addition, the reestablishment of giant reed would be controlled through the mitigation monitoring period.

As described in **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, there are no temporary impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas as all construction-related activities would occur within the proposed development footprint.

Significance Finding: Significant absent mitigation for Alternative 2. In Southern California, only 3.0% to 5.0% of the pre-settlement riparian forest remains intact, the rest having been converted primarily to farming or urban uses (Warner, *et al.* 1984). As described for direct impacts, the loss of even small acreages of riparian communities would result in substantial adverse impacts to these communities and the wildlife that occur in riparian habitats. In arid regions such as Southern California, riparian habitats play a particularly crucial role in maintaining biodiversity because up to 80.0% of vertebrate species rely on them for at least part of their lifecycle (Knopf *et al.* 1988) and because of the central role riparian habitats play in a variety of ecological functions (Fischer and Fischenich 2000; Rottenborn 1999).

The permanent impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas, although less than the RMDP development, would constitute a substantial adverse effect on the riparian vegetation communities and would threaten to eliminate this land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Indirect Permanent Impacts

The removal of riparian vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding, Mitigation Strategy for Direct Permanent and Temporary Impacts, and **Table 4.5-28**, Applicable Mitigation Measures for Direct Impacts to Riparian Vegetation Communities, above). The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Secondary Impacts

Subsection 4.5.5.1, Impact Analysis Approach and Methods, of this EIS/EIR contains a detailed description of the different secondary effects that could occur from the implementation of the proposed RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. **Subsection 4.5.5.1** also provides the reader with a comprehensive description of how secondary impacts may affect vegetation communities.

Secondary impacts are expected to occur both from the implementation of the RMDP and the SCP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Project-related construction impacts associated with the proposed RMDP, the SCP, Specific Plan, VCC, and Entrada developments would potentially result in impacts due to fugitive dust; runoff, sedimentation, chemical pollution, and erosion; litter; and accidental clearing, grading, and trampling. Long-term development-related impacts include increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency. Long-term secondary impacts resulting from implementation of the RMDP and the build-out of the Specific Plan, VCC, and Entrada planning generally can be categorized as landscape level impacts and "edge" effects that generally occur along the open space urban interface.

Native vegetation located adjacent to the proposed development areas can be adversely affected by a number of secondary effects. Excessive dust from short-term construction-related secondary impacts can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Construction of RMDP facilities or other infrastructure upgrades including mass grading can also severely or permanently alter the surface hydrology in an area and affect plant communities by reducing access to sheet flow during rain events. Vegetation can also be crushed through the inadvertent clearing of vegetation located outside the designated project footprint. Increases in human activity along the open space-urban interface may also result in the trampling of vegetation and compaction of soils. This can affect the long-term viability of plant communities and degrade wildlife habitat quality. Trampling of vegetation and compaction of soils also interacts with the soil chemistry and can affect soil moisture, water penetration, surface flows, and erosion.

Fertilizer and herbicide use may adversely affect vegetation communities and habitat quality by killing native species or allowing the establishment of non-native species in edge areas. These substances may penetrate the open space-urban interface through urban runoff from residential and commercial landscape areas and golf courses, and from overspray. Increased urban and stormwater runoff from impervious surfaces such as roads or structures may result in long-term hydrological alterations including increased runoff volume; increased peak flow rates; increased duration of flows; and altered patterns in streams and rivers. Groundwater levels may be affected as a result of interference with groundwater recharge that could cause a deficit in aquifer volumes or lowering of the local groundwater table.

Invasive plant species that thrive in edge habitats are a well documented problem along the open space-urban interface in Southern California, as well as through the U.S. riparian communities are highly susceptible to invasion from exotic plant species as these

areas are typically subject to routine scour from storm events and provide ample water to support weedy species. These nonnative species degrade habitat values by forming monocultures that displace native communities that provide food and shelter for native wildlife. Highly invasive species including giant reed and tamarisk are also known to dramatically affect the water balance of an area and can change the soil chemistry of a site. Giant reed can take over large areas of natural habitat and unlike native riparian vegetation, giant reed lacks the canopy structure that provides riverine environments with shading, thereby contributing to increased water temperatures and reduced habitat quality for aquatic species (Bell 1997). In some areas exotic plants are considered to be the greatest threat to threatened and endangered species after habitat destruction. Invasive plant species can colonize virtually any area that is subject to some kind of disturbance, such as the banks of stream channels and adjacent upland areas including road shoulders, cleared zones along housing developments, and fire breaks.

The spread of exotic species to riparian communities may dramatically alter the fire ecology of the area. The height and density of established stands of giant cane presents a fire hazard by providing large quantities of readily combustible fuels within riparian communities. During wildfires these fuels can result in excessive temperature extremes that kill native riparian species that may have otherwise survived natural wildfires. Where these and other weedy species such as tamarisk and eucalyptus invade riparian areas, the altered fire regimes can lead to type changes in habitat and further facilitate the expansion of exotic species. The alteration of vegetation communities consequently has profound effects on the wildlife species communities.

Altered wildfire regime, and particularly increased incidence of fires in urbanizing areas, may also be considered an edge effect because often these fires are a result of human activities at the open space urban interface, such as accidental ignitions from sparks from equipment such as mowers striking rocks, cigarettes, children playing with matches, and intentional ignitions such as arson. However, fires may be ignited by downed or arcing power lines or cars catching on fire along roadways in vegetated areas. More importantly, the effect of large wildfires is at the landscape level, especially when fires are quickly spread by strong winds.

Secondary effects of the proposed Project may also result in modifications to the existing hydrology of the area. One of the primary concerns to riparian ecosystems is the maintenance of a natural hydrologic regime (Busch and Smith 1995). Secondary effects from either construction or urbanization that alter the natural stream hydrology have the potential to significantly alter the existing communities in both the project area and portions of the Santa Clara River. This can occur from the attenuation of flows in tributary channels such as Middle Canyon, Long Canyon, or Potrero Canyon due to flood control structures or detention basins; or from increases in impervious surfaces that allow

large quantities of surface water to flow into the channels during storm events. Large scale grading which is planned for the proposed Specific Plan, VCC, and Entrada Planning areas can also dramatically alter the existing topography. Alterations of land forms can significantly alter the natural run-off patterns in an area and result in highly modified flow regimes to local creeks and drainages. Nuisance water from over watering or landscape irrigation can also greatly alter existing riparian communities.

The imposition of artificial stream flows by the attenuation of storm events may affect seedling recruitment at appropriate stream bank elevations, exaggerate drought stress, and increase mortality of seedlings (Mahoney and Rood 1998). In addition, the attenuation of flood events may prevent the essential geomorphic disturbance required to create new nursery sites for seedling recruitment while maintaining other areas relatively clear of vegetation within the scour zone, which provides critical habitat for a number of plant and animal species (Johnson *et al.* 1976).

Conversely, increases in storm flow and scour from un-constrained water sheds can lead to the elimination of late seral stage vegetation communities such as southern cottonwood-willow riparian forest and result in a more disturbance tolerant community such as river wash or scrub communities. Increases in summer flows from irrigation or nuisance water, coupled with periods of reduced disturbance, can result in the establishment of narrow, heavily vegetated riparian corridors in systems that would otherwise not, and historically did not, support such habitats. Encroachment of riparian vegetation on the banks of streams with augmented summer flows and attenuated storm releases can also lead to the development of monotypic stands of vegetation, channel constriction, and increased water velocities. Adverse affects on habitat are then created as sediment-starved water removes fine particulate material from the stream course resulting in stream narrowing, erosion of the streambed and banks, and development of a coarse, boulder-dominated, streambed (Mount 1995). In some circumstances these actions have resulted in the decadence and loss of riparian vegetation communities (Howe and Knopf 1991). Episodes of erosion, deposition, and inundation shape fluvial landforms and associated vegetation communities. Alteration of the channel cross-section resulting from variations from natural flow characteristics can strongly affect species distribution, which is strongly tied to height above the channel bed (Hupp and Osterkamp 1985).

To evaluate the potential downstream effects of the project on the Santa Clara River from the proposed Project the applicant completed a detailed hydrological analysis of the project area. While a number of studies provide insight to the effects of flow regulation on riparian habitats, current ecological theory suggests that a hydrologic regime that reflects a natural or nearly natural hydrologic cycle is necessary to maintain the complete native biodiversity and integrity of an aquatic ecosystem (Richter *et al.* 1997).

The Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue, and as a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

Significance Finding: Significant absent mitigation for Alternative 2. The short-term (fugitive dust; runoff, sedimentation, chemical pollution, and erosion; litter; and accidental clearing, grading, and trampling) and long-term (increased risk of non-native, invasive plant and animal species; litter; human disturbance; and modified fire frequency) secondary impacts described above would constitute a substantial adverse effect on the riparian vegetation communities that are present, would threaten to eliminate riparian vegetation communities on site, and would threaten to substantially reduce the number or restrict the range of special-status species known to occur on site (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

In order to reduce short-term and long-term secondary impacts to riparian plant communities resulting from the implementation of the RMDP and the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant will implement a series of existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources. Similar to the effects described for Direct and Indirect Impacts, many of the existing and proposed mitigation measures address the effects of several impacts. For example, the creation and maintenance of buffer areas can reduce the spread of wildfires, limit herbicide or fertilizer transport to native plant communities, inhibit the spread of exotic species, and attenuate the effects of human trampling on vegetation. Best management practices that reduce off-site sediment transport or nuisance water would also effectively mitigate the effects of both construction and secondary effects including irrigation or fertilizer use. Specific mitigation measures are described below.

Mitigation measures have been designed to limit the amount of particulate matter (dust) that leaves the construction area control dust and include actions such as daily watering

of disturbed areas and the use of chemical tackifiers. Best management practices (BMPs) would also be employed to reduce the off-site transport of sediment or sediment laden water during storm events. The applicable mitigation measures to reduce impacts from fugitive dust, runoff, erosion, sedimentation, and chemical pollutants include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-44 and SP-4.6-45 (drainage guidelines); as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone), BIO-46 (requiring the presence of a qualified biologist during stream diversion), BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area), BIO-49 (prevention of mud and pollutants from entering streams and storm flows), BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities), BIO-70 (project design features, construction notes, and SWPPP BMPs (erosion and dust control, staging/storage area restrictions, equipment maintenance restrictions, trash restrictions) to ensure protection of vegetation communities and special status species), and BIO-71 (dust control measures to protect vegetation communities and special status aquatic wildlife species).

The applicant would also develop and construct a storm drain system that would match the existing hydrology to preserve the integrity of vegetated areas. This would prevent stormwater from collecting in vegetated areas and increasing soil moisture. In some cases increases in soil moisture can alter the vegetation community present at a site where plants have adapted to specific hydrology conditions. Flood control facilities would be designed pursuant to adopted BMPs and NPDES permitting requirements. The Newhall Ranch Sub-regional Stormwater Mitigation Plan prescribes the post-development stormwater management facilities to treat or detain runoff to ensure compliance with the Basin Plan and other policies such as hydromodification. Further, drainage structures would focus on managing the amount of debris that would enter the drainage system, balancing the amount of sedimentation or erosion that would occur, and maintaining the quality of water in the drainage system at a level consistent with the Clean Water Act and Porter Cologne Act. As previously described the possibility of herbicides or fertilizers accessing adjacent habitat may occur in a number of ways. Applicators could inadvertently apply the material to the vegetation; the chemicals can be associated with soil that washes off treated sites; or through drift from treated areas to adjacent habitat. To reduce these effects the applicant would ensure that the use of herbicides would take place over short periods of time, and would be applied either by or under the supervision

of a licensed professional to ensure that specific safety measures are followed. To reduce the potential for spills, the refueling of portable equipment shall occur within a contained area and applications would not occur during the wet season. These measures, coupled with the use of buffer areas including detention basins and naturally vegetated areas, would decrease the potential for wind blown or surface transported herbicides or fertilizers from reaching adjacent vegetation. The mitigation measures described above for short-term water quality impacts would also reduce the potential effects of changes in hydrology and use of herbicides and fertilizers. Additional applicable mitigation measures to reduce impacts from changes in hydrology and use of herbicides and fertilizers include the previously incorporated Mitigation Measures SP-4.6-44 and SP-4.6-45 (drainage guidelines), SP-4.6-58 (conformance with NPDES and RWQCB permit provisions), SP-4.6-64 (golf course maintenance plan).

The effects of invasive and noxious plants on natural communities are well documented. Invasive plants interfere in ecosystem functions by out-competing and displacing native plants and in some cases by hybridizing with native species (Bossard *et al.* 2000). Urbanization can adversely affect native vegetation communities by increasing the potential spread of exotics from landscaping or the release of seed packets into adjoining habitat by homeowners. Some of the measures identified in this EIS/EIR that would reduce the secondary effects of the proposed Project include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. Some of the specific measures include previously incorporated Mitigation Measures SP-4.6-7 (revegetation plans for the River Corridor SMA to include guidelines for maintenance of the mitigation site during plant establishment), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA), SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA), and SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub); as well as Mitigation Measure BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation).

The spread of invasive plants can also result in altered fire ecology. Wildfires can be more common in urbanized areas where vehicles and equipment are operated in close association with vegetated areas. Sparks from vehicles, charcoal grills, or negligently discarded cigarettes can also result in fires. Similar to the measures described above, the applicant has proposed the development of transitional buffers adjacent to the proposed development. In addition, Fuel Management Zones (FMZ) would be located adjacent to

structures such as residential and commercial properties. Within these areas excess fuels and dead vegetation would be periodically removed and fire retardant plant species would be planted. These areas would provide the buffer requirements identified by the Los Angeles County Fire Department and would limit the potential for the spread of wildfires into adjacent habitat. To reduce accidental wildfires the applicant would implement a series of measures including the restriction of motorized vehicles in the High Country and River Corridor SMA, authorize the use of designated trails only, and restrict smoking in natural areas. During construction, the applicant would develop and implement a fuel modification plan that specifically addresses the use of welding equipment and designated fire watches in vegetated areas, ensures vehicles are equipped with spark arrestors, and identifies approved smoking areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, grading, and trampling would be minimized through the use of clearly identified construction areas and full-time biological monitoring to reduce the potential for equipment to stray into adjacent vegetation. The applicable mitigation measures to reduce impacts from trampling and clearing of vegetation outside of the construction zone include the previously incorporated measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone) and BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities).

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. These include Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-39 (High Country SMA grazing and recreational use restrictions); as well as Mitigation Measures BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)

and BIO-73 (permanent fencing along trails in the River Corridor SMA). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

Implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

A concise summary of the specific mitigation measures that reduce the secondary impacts of the proposed Project are described in **Table 4.5-29** below.

Table 4.5-29
Applicable Mitigation Measures for Secondary Impacts to Riparian Vegetation Communities

Mitigation Measure(s)	Issue Mitigating
SP-4.6-7 (revegetation plans for the River Corridor SMA to include guidelines for maintenance of the mitigation site during plant establishment)	Invasive plants
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; fire frequency; trampling and littering
SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA)	Invasive plants
SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA)	Invasive plants
SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA)	Trampling and littering
SP-4.6-31 (prohibition of hunting, fishing, motor or trail bikes within the High Country SMA)	Fire frequency
SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; fire frequency; trampling and littering
SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs)	Invasive plants; fire frequency
SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
SP-4.6-39 (High Country SMA grazing and recreational use restrictions)	Trampling and littering
SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub)	Invasive plants
SP-4.6-44 and SP-4.6-45 (drainage guidelines)	Hydrology and water quality; fertilizers and herbicides; runoff, erosion,

Table 4.5-29
Applicable Mitigation Measures for Secondary Impacts to Riparian Vegetation Communities

	sedimentation, and chemical pollutants
SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs)	Fire frequency
SP-4.6-58 (conformance with NPDES and RWQCB permit provisions)	Hydrology and water quality; fertilizers and herbicides
SP-4.6-64 (golf course maintenance plan)	Fertilizers and herbicides
BIO-45 (pre-construction diversion of all stream flows within a work zone)	Runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
BIO-46 (requiring the presence of a qualified biologist during stream diversion)	Hydrology, water quality
BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area)	Runoff, erosion, sedimentation, and chemical pollutants
BIO-49 (prevention of mud and pollutants from entering streams and storm flows)	Runoff, erosion, sedimentation, and chemical pollutants
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Trampling and littering
BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs to ensure protection of vegetation communities and special-status species)	Dust, runoff, erosion, sedimentation, and chemical pollutants
BIO-71 (dust control measures to protect vegetation communities and special-status aquatic wildlife species)	Dust
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Invasive plants
BIO-73 (permanent fencing along trails in the River Corridor SMA)	Trampling and littering

Summary of Impacts and Mitigation Strategy for Riparian Communities. Construction of RMDP facilities and build-out of the proposed development would both result in the permanent removal of riparian vegetation communities from the planning area. Implementation of the RMDP facilities would also result in the temporary loss of riparian vegetation communities. In total, implementation of the proposed RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 116 acres and the temporary removal of 98 acres of the total 1,189 acres of riparian communities that occur on site. Implementation of the SCP would not directly impact any riparian vegetation community.

As described above riparian ecosystems have undergone extensive changes as a result of urbanization, water diversion, agriculture, and river channelization. In southern

California, the loss of even small portions of riparian vegetation has the potential to result in significant adverse effects to both riparian plant communities and the wildlife that are dependent on them. Construction activities that remove habitat or urbanization related secondary effects such as the spread of exotic weeds or altered fire regimes would also adversely affect these communities. Therefore, the direct and indirect impacts associated with the proposed project would result in significant impacts absent mitigation.

Implementation of the mitigation measures described for Direct, Indirect, and Secondary Impacts above would reduce the effects of the proposed Project on riparian vegetation communities to less-than-significant levels. These measures include creation, enhancement, and/or restoration of riparian vegetation communities, as well as the dedication and preservation of large areas of natural lands intended to off-set the permanent removal of riparian vegetation. The dedicated areas described in Direct and Indirect Impacts would also be managed for the preservation and enhancement of natural communities. These measures would ultimately be designed to replace impacted riparian communities; restore, enhance, and maintain natural riparian communities; and create new riparian communities after development.

Secondary impacts from short term construction include fugitive dust, runoff, accidental clearing, grading, and trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would also be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this Project would be implemented to reduce the effects of the proposed Project on riparian vegetation communities. Implementation of these measures would reduce direct, indirect, and secondary impacts to this vegetation class to a level that is adverse but not significant.

Impacts to California Annual Grasslands, Agriculture, Disturbed Land, and Developed Land

Existing Conditions. Most of the RMDP and Specific Plan study area has been subject to various forms of disturbances for decades. These include the construction of utilities and access roads, oil and natural gas production, cattle grazing, and agricultural operations. These ongoing activities have resulted in the degradation or elimination of habitat within portions of the RMDP and lead to the establishment of exotic plant communities. These include California annual grasslands, agriculture, disturbed land, and developed land.

California annual grassland, agriculture, and disturbed land are not considered special status by any federal, state, or local regulatory agencies within the project area. These habitats are common within the local and regional landscape, and the relative quality of these habitat types is low in many sections of the Specific Plan area due to ongoing anthropogenic disturbances including oil production and grazing. The loss of prime farmland which may occur as a result of the proposed Project is discussed in **Section 4.12**, Agricultural Resources.

As described in **Subsection 4.5.3.3**, Existing Conditions by Planning Area, while these communities and land covers are not typically protected, California annual grassland, agriculture, and disturbed lands in the project area are known to support a variety of special-status plants and wildlife. California annual grasslands in the project area support special-status plants including San Fernando Valley spineflower, Peirson's morning glory and slender mariposa lily; and provide open foraging habitat for raptors (birds of prey) such as white-tailed kite, and American kestrel. Other wildlife may include sharp shinned hawk, prairie falcon, merlin, northern harrier, coastal western whiptail, and coast horned lizard.

Agriculture practices, such as sowing of cereal crop fields (*e.g.*, oats and barley) and pasture areas (*e.g.*, alfalfa) are known to support large numbers of small mammals and rodents (*e.g.*, rabbits, mice, and squirrels). These species provide foraging opportunities for species such as California horned lark, loggerhead shrike, sharp-shinned hawk, northern harrier, merlin, golden eagle, turkey vulture, prairie falcon, and tricolored blackbird, and sometimes contain denning habitat for American badger. Disturbed land typically provides lower habitat quality when compared to more naturally vegetated areas; however, this land cover can also provide important foraging opportunities for many species. In the project area, disturbed land is known to support many of the same species that occur in California annual grasslands: California horned lark, tricolored blackbird, merlin, golden eagle, turkey vulture, prairie falcon, and sharp-shinned hawk.

Developed land typically provides only limited opportunities for wildlife; however, some species including nesting birds, bats, and rodents may occur in close proximity to structures that support limited human activity.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP and the SCP would result in both permanent and temporary impacts to California annual grassland, agriculture, and

disturbed land. Developed lands would not be directly affected by the implementation of the RMDP and the SCP. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

The sources of direct impacts (*i.e.*, clearing and grading) to California annual grassland, agriculture, and disturbed/developed vegetation communities and land covers would be the same as for riparian vegetation communities.

Construction activities associated with the development of RMDP facilities (*e.g.*, buried bank protection, levees, bridges, and ancillary structures) would result in the permanent removal of approximately 24 acres and the temporary disturbance of 9.7 acres of California annual grassland habitat; the permanent removal of 116 acres and the temporary disturbance of 68 acres of agriculture; and the permanent removal of 71 acres and the temporary disturbance of 16 acres of disturbed areas**.** These temporary disturbance areas would not be restored to grassland, agriculture, or disturbed areas, but would be restored as part of channel reconstruction and would be converted to other native riparian and upland vegetation communities. As a relative index of the habitat availability on site, approximately 2,300 acres of California annual grassland habitat; 1,617 acres of agriculture; and 1,201 acres of disturbed land occur within the proposed Project area. Thus, the approximate loss of these habitats relative to their availability from direct impacts is less than 1.0% of the existing vegetation communities present in the Project area. Most of the habitat removal that would occur under the proposed Project would result from the effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. These effects are described fully below under Indirect Effects.

Implementation of the proposed SCP would result in native vegetation restoration of up to 55 acres of California annual grassland, 11 acres of agriculture, and 14 acres of disturbed land within the proposed spineflower preserves.

Significance Finding: Significant absent mitigation for Alternative 2. The permanent land use conversion of relatively small amounts of California annual grassland, agriculture, and disturbed/developed areas do not typically result in adverse effects to biological resources. However, these communities provide habitat for several special-status wildlife species that are known to occur in the project area. Although most grasslands within the state and the proposed RMDP study area have been heavily colonized by exotic grasses and are highly affected by grazing; with the exception of developed parcels, these communities (*e.g.*, annual grasslands, agriculture, and disturbed land) remain important foraging areas for raptors and other special-status wildlife. In addition, much of these

areas occur adjacent to existing riparian corridors or native upland habitats and are utilized by several sensitive species including white tailed kite. The permanent conversion of these areas can have dramatic effects on plant and wildlife species that require these areas for nesting or foraging.

Implementation of the RMDP would also result in the temporary loss of vegetation communities and land covers. Temporary disturbance to vegetation and land covers would occur from clearing and grading associated with construction of proposed temporary haul roads and construction of proposed permanent new access roads, grade control structures, buried bank protection, installation of culverts, and other improvements. The temporary disturbance of vegetation communities and land covers would occur where grading or soil disturbance would occur for a short period of time (*e.g.*, along the edges of proposed facilities), but where no permanent structures would be constructed. These temporary disturbance areas would not be restored to grassland, agriculture, or disturbed areas, but would be restored as part of channel reconstruction and would be converted to other native riparian and upland vegetation communities.

Temporary effects to California annual grassland, agriculture, and disturbed land in the RMDP study area are low compared to the acreage of these communities in the planning area. With the exception of agriculture or disturbed/developed land, which already support large non-native forb plant populations in the planning area, construction activities that result in disturbance to California annual grasslands could lead to the further spread or colonization of exotic weeds and could result in type changes to more non-native forb-dominated or disturbed habitats. The spread of existing invasive populations or the establishment of new noxious weed populations in previously native areas as a result of Project activities would be considered a significant impact without mitigation. Due to the intense effects of noxious weed establishment and spread within California, and the difficulty in controlling existing infestations or restoring arid habitats, Project-related activities that result in the increase in noxious weed populations would have long-lasting consequences for habitats adjacent to the RMDP and Specific Plan area.

The spread or colonization of invasive weeds can also result in increased fire frequency. Project areas subject to temporary disturbance would require restoration after construction to ensure stormwater runoff does not lead to off-site sediment transport, and to reduce or limit the effects of wildfire on adjacent communities. These temporary disturbance areas would be restored as part of channel reconstruction and would be converted to other native riparian and upland vegetation communities.

Typically, the loss of non-sensitive plant communities including California annual grassland, agriculture, and disturbed/developed vegetation communities and land covers would not be considered a significant impact. These communities are not sensitive, are locally and regionally abundant, and are typically dominated by exotics. Generally additional mitigation would not be required unless these communities occur within designated critical habitat for a federally listed species (*i.e.*, only critical habitat with constituent elements of the species' habitat, and not developed land, for example) or are known to support special-status plant species or wildlife that utilize these areas for foraging or nesting. Because California annual grassland, agriculture, and disturbed land are considered important foraging, nesting, and movement areas for sensitive plants and wildlife, the permanent land conversion of even small areas of these communities would be considered significant. Therefore, the permanent and temporary impacts associated with the implementation of the RMDP would constitute a substantial adverse effect on the vegetation community and would threaten to eliminate the land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species), (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2. Impacts to developed land would not be significant.

Mitigation Strategy for Direct Permanent and Temporary Impacts

The primary mechanism for mitigating the permanent loss of California annual grassland, agriculture, and disturbed land in the RMDP and Specific Plan area is the implementation of measures designed to mitigate vegetation communities that were lost through construction by the dedication of existing natural lands in the River Corridor SMA, High Country SMA, and Salt Creek area. The specific mitigation measures that would provide for the dedication of open space and management of these areas include previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA), and SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO).

These areas support the same types of habitat that would be lost through construction and some areas would be further enhanced through ongoing

management activities. These activities would include a reduction in cattle grazing except where grazing may be used as a management tool to maintain foraging value within annual grassland areas and control invasive plant species and the removal of agricultural practices within Open Area. These measures provide mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to California annual grassland, agriculture, and disturbed land.

Further protection of vegetation communities would be achieved through the creation of buffers and biologically monitored perimeters during construction periods. Biologically monitored perimeters would limit the potential for the contractor to disturb vegetation outside the proposed construction footprint. The use of these measures would identify the limits of construction and provide a biological monitor to review the construction area in the field with the contractor and be present during initial vegetation clearing and grading. To further reduce the impacts of the proposed RMDP from accidental clearing or trampling of vegetation the applicant would implement previously incorporated Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA); SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the River Corridor SMA and the High Country SMA); and BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities). Implementation of these measures would reduce these effects to less-than-significant levels.

Following development, continued preservation of the dedicated areas would be accomplished through restricted access and long-term management of the River Corridor SMA, High Country SMA, and Salt Creek area. To further reduce the impacts of the proposed Project, the applicant would implement previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA); and BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). Implementation of these measures would reduce these effects to less-than-significant levels.

Long-term management activities would include a reduction in cattle grazing except where grazing may be used as a management tool to control exotics. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation

Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA), and SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO). These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to California annual grassland, agriculture, and disturbed land. These areas support the same types of habitat that would be lost through construction and would be further enhanced through ongoing management activities.

The specific mitigation measures that would be utilized to reduce the direct impacts of the proposed RMDP to a level that is adverse but not significant are identified below in **Table 4.5-30**.

Table 4.5-30
Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land

Mitigation Measure(s)	Issue Mitigating
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Vegetation Removal
SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA)	Vegetation Removal
SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA)	Vegetation Removal
SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA)	Vegetation Removal
SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA)	Vegetation Removal
SP-4.6-34 (marking and inspection of grading perimeters prior to impacts within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-35 (avoidance of inadvertent impacts to biological resources within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA)	Vegetation Removal
BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126)	Vegetation Removal
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Vegetation Removal
BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO)	Vegetation Removal
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Vegetation Removal
BIO-73 (permanent fencing along trails in the River Corridor SMA)	Vegetation Removal

Indirect Permanent Impacts

Most of the effects to California annual grassland, agriculture, and disturbed land would occur from the build-out of the Specific Plan, VCC, and Entrada planning areas. Each of these communities is present in the Specific Plan, VCC, and Entrada planning areas (see **Figures 4.5-11-A1** through **4.5-11-C2**). The loss of these communities would occur through construction-related activities and the development of residential housing, commercial properties, and infrastructure.

Construction activities associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of approximately 1,042 acres of California annual grassland; 1,148 acres of agriculture; 889 acres of disturbed land; and 2.3 acres of developed land. In relation to each planning area approximately 955 acres of California annual grassland would be removed from the Specific Plan planning area, 64 acres would be removed from the VCC development, and 23 acres from the Entrada site (**Table 4.5-27**). Permanent impacts to disturbed and developed land would include 780/0.3 acres in the Specific Plan planning area, 60/1.6 acres from the VCC development, and 49/0.4 acres from the Entrada site respectively. The approximate loss of these habitats relative to their availability on site from indirect impacts is 45.3% for California annual grassland, 71.0% for agriculture, 74.0% for disturbed land, and 48.9% for developed land.

As described in **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, there are no temporary impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas as all construction-related activities would occur within the proposed development footprint.

Significance Finding: Significant absent mitigation for Alternative 2. The build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent land conversion of large areas of contiguous wildlife habitat within the Project area. California annual grassland, agriculture, and disturbed land are considered important live-in, foraging, nesting, and movement areas for special-status plants and wildlife in the project area and the permanent land conversion of these communities would be significant.

As described for direct impacts, while these communities are not sensitive, are locally and regionally abundant, and are typically dominated by exotics, they provide important habitat for several special-status plant and wildlife species in the project area including San Fernando Valley spineflower, Peirson's morning glory, slender mariposa lily, white-tailed kite, American kestrel, sharp shinned

hawk, prairie falcon, merlin, northern harrier, coastal western whiptail, and coast horned lizard, and sometimes contain denning habitat for American badger.

The permanent impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would constitute a substantial adverse effect on the vegetation community and would threaten to eliminate the land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Indirect Permanent Impacts

The removal of California annual grassland, agriculture, and disturbed land from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding, Mitigation Strategy for Direct Permanent and Temporary Impacts, and **Table 4.5-30**, Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land, above). To reduce or minimize the large scale removal of vegetation the applicant has proposed the dedication and enhancement of lands in the High Country SMA, River Corridor SMA, and Salt Creek area, and Open Area. These areas would mitigate the lost vegetation community/land covers by preserving at a 0.5:1 mitigation ratio lands supporting the same types of plants and wildlife lost through the implementation of the proposed Project. The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Secondary Impacts

Secondary impacts are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to California annual grassland, agriculture, and disturbed land located adjacent to the proposed development areas would be subject to the same types of secondary effects as riparian vegetation communities. This can include impacts due to fugitive dust; runoff, sedimentation, chemical pollution, and erosion; hydrological alterations; litter; and accidental clearing, grading, and trampling. Long-term development-related effects including landscape-level impacts and "edge" effects include the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

Significance Finding: Significant absent mitigation for Alternative 2. The secondary effects of the proposed Project would be the same as described for riparian communities. The only difference is the magnitude of the effect. Since California annual grassland, agriculture, and disturbed land consist primarily of exotic non-native species the overall effects to these communities are attenuated. However, because in some areas these communities support sensitive plants and wildlife secondary impacts of the project may still result in significant impacts absent mitigation.

As described for riparian communities fertilizer and herbicide use in adjacent areas may effect these communities; however as these areas are dominated by non-native grasses and forbs the effects of chemical use are typically less pronounced. Fertilizer and herbicide use may adversely affect California annual grassland, agriculture, and disturbed land that has been subject to some form of restoration or enhancement. Nonetheless excessive fertilizer use or run-off may lead to type changes in grassland habitats and the result in the spread of more exotic and invasive species into California annual grasslands.

Increases in human activity along the open space-urban interface would also be the same. California annual grassland, agriculture, and disturbed land typically support a vegetation structure that is more open and less dense than many other plant communities. These areas also support attractive native and non-native annual flowers which tend to attract human visitors. Open areas with light vegetative cover may also attract pet owners, hikers, and other recreationists. This may result in the trampling of vegetation and compaction of soils. This can affect the long-term viability of plant communities and further degrade wildlife habitat. Trampling of vegetation and compaction of soils also interacts with the soil chemistry and can affect soil moisture, water penetration, surface flows, and erosion. Ultimately, this may lead to the further establishment of exotic plants.

The spread of invasive plants coupled with urbanization and increased public access may also result in altered fire ecology. Wildfires can be more common in urbanized areas where vehicles and equipment are operated in close association with vegetated areas. Sparks from vehicles, or from equipment such as mowers striking rocks, children playing with matches, charcoal grills, or negligently discarded cigarettes can result in fires. Fires may also be ignited by downed or arcing power lines or cars catching on fire along roadways in vegetated areas. More importantly, the effect of large wildfires is at the landscape level, especially when fires are quickly spread by strong winds.

While the effects of wildfires on disturbed or developed habitat are less likely to effect sensitive plants or wildlife these fires can quickly spread to adjacent communities. California annual grasslands which are dominated by exotic grasses quickly recover after

periodic fires. However, these communities can transition or degrade to more disturbed plant communities depending on the frequency of wildfires.

These short-term and long-term secondary impacts would constitute a substantial adverse effect on the vegetation communities and would threaten to eliminate the land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

In order to reduce short-term and long-term secondary impacts to California annual grassland, agriculture, and disturbed land resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant would implement the same general mitigation measures as described for Riparian Plant Communities (**Mitigation Strategy for Secondary Impacts**). This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources. The primary difference in the application of mitigation measures is that specific measures related only to riparian plant communities would not apply in upland areas. Otherwise the measures would be utilized.

Secondary effects associated with dust, runoff, erosion, sedimentation, and chemical pollutants would be the same as those described for riparian vegetation communities. Mitigation measures have been designed to limit the amount of particulate matter (dust) that leaves the construction area control dust and include actions such as daily watering of disturbed areas and the use of chemical tackifiers. BMPs would also be employed to reduce secondary impacts associated with runoff, erosion, sedimentation, and chemical pollutants. The applicable mitigation measures to reduce impacts from fugitive dust, runoff, erosion, sedimentation, and chemical pollutants include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-44 and SP-4.6-45 (drainage guidelines); as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone), BIO-46 (requiring the presence of a qualified biologist during stream diversion), BIO-47 (slow moving water habitats shall be constructed upstream and

downstream of any river crossing or bridge construction area), BIO-49 (prevention of mud and pollutants from entering streams and storm flows), BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities), BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs (erosion and dust control, staging/storage area restrictions, equipment maintenance restrictions, trash restrictions) to ensure protection of vegetation communities and special status species), and BIO-71 (dust control measures to protect vegetation communities and special status aquatic wildlife species).

While the effects of invasive and noxious plants or altered fire ecology would be minimal on more disturbed habitats the applicant would still require the implementation of mitigation measures that include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. Some of the specific measures include previously incorporated Mitigation Measures SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) and SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs; as well as Mitigation Measure BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation).

In addition, FMZs would be located adjacent to structures such as residential and commercial properties. Measures to control the use of motorized vehicles in the High Country and River Corridor SMA, authorize the use of designated trails only, and restrict smoking in natural areas would also be the same as for riparian communities. During construction, the applicant would develop and implement a fuel modification plan that specifically addresses the use of welding equipment and designated fire watches in vegetated areas, ensures vehicles are equipped with spark arrestors, and identifies approved smoking areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, and grading, and long-term effects of trampling and litter would be the same as those described for riparian communities.

These impacts would be minimized through the use of clearly identified construction areas, full-time biological monitoring, the preservation of mitigation lands, and the education of homeowners regarding the sensitivity of natural lands. These include Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), as well as BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities).

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. These include Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-39 (High Country SMA grazing and recreational use restrictions); as well as Mitigation Measures BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. A concise summary of the specific mitigation measures that reduce the secondary impacts of the proposed Project are described below in **Table 4.5-31**, Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land.

Table 4.5-31
Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land

Mitigation Measure(s)	Issue Mitigating
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; fire frequency; trampling and littering
SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA)	Invasive plants
SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling

Table 4.5-31
Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land

Mitigation Measure(s)	Issue Mitigating
SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA)	Trampling and littering
SP-4.6-31 (prohibition of hunting, fishing, motor or trail bikes within the High Country SMA)	Fire frequency
SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; fire frequency; trampling and littering
SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs)	Invasive plants; fire frequency
SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA)	Dust, runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
SP-4.6-39 (High Country SMA grazing and recreational use restrictions)	Trampling and littering
SP-4.6-44 and SP-4.6-45 (drainage guidelines)	Hydrology and water quality; fertilizers and herbicides; runoff, erosion, sedimentation, and chemical pollutants
SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs)	Fire frequency
SP-4.6-58 (conformance with NPDES and RWQCB permit provisions)	Hydrology and water quality; fertilizers and herbicides
BIO-45 (pre-construction diversion of all stream flows within a work zone)	Runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
BIO-46 (requiring the presence of a qualified biologist during stream diversion)	Hydrology, water quality
BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area)	Runoff, erosion, sedimentation, and chemical pollutants
BIO-49 (prevention of mud and pollutants from entering streams and storm flows)	Runoff, erosion, sedimentation, and chemical pollutants
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Runoff, erosion, sedimentation, and chemical pollutants; accidental clearing, grading, and trampling
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Trampling and littering
BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs to ensure protection of vegetation communities and special-status species)	Dust, runoff, erosion, sedimentation, and chemical pollutants
BIO-71 (dust control measures to protect vegetation communities and special-status aquatic wildlife species)	Dust
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Invasive plants

Table 4.5-31
Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land

Mitigation Measure(s)	Issue Mitigating
BIO-73 (permanent fencing along trails in the River Corridor SMA)	Trampling and littering

Summary of Impacts and Mitigation Strategy for California Annual Grasslands, Agriculture, Disturbed Land, and Developed Land. Construction of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of California annual grassland, agriculture, and disturbed land. Implementation of the RMDP facilities would also result in the temporary disturbance of these vegetation communities/land covers. These temporary disturbance areas would not be restored to grassland, agriculture, or disturbed areas, but would be restored as part of channel reconstruction and would be converted to other native riparian and upland vegetation communities. In total, implementation of the proposed RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 3,293 acres and the temporary removal of 94 acres of the total 5,122 acres of these three vegetation communities/land covers that occur on site. Implementation of the proposed SCP would result in native vegetation restoration of up to 55 acres of California annual grassland, 11 acres of agriculture, and 14 acres of disturbed land within the proposed spineflower preserves.

Typically, the loss of non-sensitive plant communities including California annual grassland, agriculture, and disturbed/developed vegetation communities and land covers would not be considered a significant impact. These communities are not sensitive, are locally and regionally abundant, and are typically dominated by exotics. Generally additional mitigation would not be required unless these communities occur within designated critical habitat for a federally listed species (*i.e.*, only critical habitat with constituent elements of the species' habitat, and not developed land, for example) or are known to support special-status plant species or wildlife that utilize these areas for foraging or nesting. Because California annual grassland, agriculture, and disturbed land are considered important foraging, nesting, and movement areas for sensitive plants and wildlife, the permanent land conversion of even small areas of these communities would be considered significant. Impacts to developed land would not be significant.

Implementation of the mitigation measures described for Direct, Indirect, and Secondary Impacts above would reduce the effects of the proposed Project on California annual grassland, agriculture, and disturbed land to less-than-significant levels. These measures include restoration of temporary impact areas, as well as the dedication and preservation

of large areas of natural lands intended to off-set the permanent removal of these vegetation communities/land covers. The dedicated areas described in Direct and Indirect Impacts would also be managed for the preservation and enhancement of natural communities.

Secondary impacts from short-term construction include fugitive dust, runoff, accidental clearing, grading, and trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would also be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this project would be implemented to reduce the effects of the proposed Project on California annual grassland, agriculture, and disturbed land. Implementation of these measures would reduce direct, indirect, and secondary impacts to California annual grassland, agriculture, and disturbed land to a level that is adverse but not significant.

Impacts to Coastal Scrub Communities

Existing Conditions. Coastal scrub communities (including alliances and associations) are characterized by a variety of soft, low, aromatic, drought-deciduous shrubs, such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), California bush sunflower (*Encelia californica*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*). It typically develops on south-facing slopes and other xeric situations.

This vegetation category includes alliances of coastal scrub (California sagebrush scrub, California sagebrush–black sage scrub, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral, coyote brush scrub) and their associations (burned California sagebrush scrub, California sagebrush–*Artemisia*, California sagebrush–purple sagebrush, disturbed California sagebrush scrub–purple sage, California sagebrush–black sage, burned California sagebrush scrub–undifferentiated chaparral). For the purposes of this document big sagebrush scrub and big sagebrush scrub-California buckwheat communities have been included in the riparian community discussion.

Coastal scrub exists primarily in wide areas on the central portion of the RMDP study area, as well as in the VCC and Entrada planning areas. Primary disturbance in this community consisted of dirt roads and utility tower footprints in the VCC planning area; however, overall, this community was relatively intact. Although the Entrada planning

area is influenced by adjacent disturbance and development, the community appeared to be relatively intact. This vegetation community provides potential habitat for the special-status plant species, including Peirson's morning-glory and southern California black walnut, and several special-status wildlife species, including southern California rufous-crowned sparrow, Bell's sage sparrow, black-chinned sparrow, Costa's hummingbird, sharp-shinned hawk, northern harrier, loggerhead shrike, golden eagle, turkey vulture, San Bernardino ringneck snake, silvery legless lizard, coast horned lizard, coastal western whiptail, and mountain lion.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP and the SCP would result in both permanent and temporary impacts to coastal scrub vegetation communities. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

The sources of direct impacts (*i.e.*, clearing and grading) to coastal scrub vegetation communities would be the same as for riparian vegetation communities.

Construction activities associated with the development of RMDP facilities (*e.g.*, buried bank protection, levees, bridges, and ancillary structures) would result in the permanent removal of 31 acres and temporary removal of 2.3 acres of coastal scrub communities on site. These impacts would occur to coastal scrub vegetation communities, including California sagebrush scrub and coyote bush scrub alliances and associations. Direct impacts to coastal scrub communities include the permanent/temporary loss of 5.5/0.6 acres of burned California sagebrush scrub; the permanent/temporary loss of 11/1.1 acres of California sagebrush scrub; the permanent/temporary loss of 3.3/0.2 acres of California sagebrush – *Artemisia*; the permanent/temporary loss of 1.8/0.2 acres of California sagebrush – black sage; the permanent/temporary loss of 3.9/0.2 acres of California sagebrush – California buckwheat scrub; the permanent/temporary loss of 1.9/0.1 acres of California sagebrush scrub – undifferentiated chaparral; the permanent/temporary loss of 2.9/0.0 acres of California sagebrush – purple sage; and the permanent/temporary loss of 0.6/0.0 acre of coyote brush scrub. Permanent and temporary impacts from implementation of the proposed RMDP would not occur to burned California sagebrush scrub/undifferentiated chaparral

or disturbed California sagebrush – purple sage. These temporary disturbance areas would not all be restored to the same coastal scrub associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include coastal scrub at higher elevations along the channel banks. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

As a relative index of the habitat availability on site, approximately 4,336 acres of scrub communities occur in the proposed RMDP project area. Thus, the approximate loss of these habitats relative to their availability from direct impacts is 1.0% of the existing scrub communities present in the Project area. However, the total percentage of any given community may range from a low of 0% for disturbed California sagebrush – purple sage to 4.0% for California sagebrush scrub– *Artemisia*. What is important to recognize is the total percentage of a vegetation community lost only reflects the percent of the habitat that occurs in the project area.

Significance Finding: Significant absent mitigation for Alternative 2. In Southern California coastal scrub communities are locally and regionally abundant. In the Project area these communities form large blocks of habitat and dominate many of the hillsides in the RMDP planning area. Although widespread, scrub communities provide a unique vegetation structure and set of foraging resources that supports a broad array of special-status plants and wildlife. In addition, these communities have experienced rapid decline in the past decade from increasing development of coastal areas within southern California.

Although the other coastal scrub communities are not considered sensitive by federal, state, or local regulatory agencies, these communities provide live-in, nesting and foraging habitat for numerous special-status plant and wildlife species within the Project area. The loss of these communities associated within the RMDP and SCP study area would constitute a substantial adverse effect on the vegetation community and would threaten to eliminate the land cover type in the project area. The Project would also have the potential to substantially reduce the number or restrict the range of special-status species (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Scrub communities would be subject to the same construction related impacts as described for Riparian Vegetation Communities and California annual grassland,

agriculture, and disturbed land (described above). These effects result from the permanent removal of these vegetation communities from the RMDP and SCP planning area. Temporary disturbance to these vegetation communities will also occur from clearing and grading associated with the construction of access roads, grade control structures, buried bank protection, installation of culverts and other improvements. These temporary disturbance areas would not all be restored to the same coastal scrub associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include coastal scrub at higher elevations along the channel banks. **Subsection 4.5.5.1**, Impact Analysis Approach and Methods of this EIS/EIR contains a detailed description of the different direct, indirect, and secondary effects that could occur from the implementation of the proposed RMDP.

As described above scrub communities would be subject the same types of impacts as riparian communities. The primary difference is how scrub communities respond to temporary disturbance and the colonization of exotic species. Similar to riparian communities coastal scrub vegetation is highly susceptible to damage from clearing and grading activities. These types of disturbances can result in the expansion or colonization of exotic weeds. Coastal scrub appears to be an easily invaded vegetation type, due in part to its open canopy (Allen 1998; Cox and Allen 2008). Exotic weeds can then result in the alteration of soil conditions and the disruption of native seed banks. Because coastal scrub communities are often in varying states of succession disturbance and colonization of weeds can quickly alter the community structure.

Mitigation Strategy for Direct Permanent and Temporary Impacts

The primary mechanism for mitigating the permanent loss of coastal scrub in the RMDP and Specific Plan area is the implementation of measures designed to mitigate vegetation communities that were lost through construction by the dedication of existing natural lands in the River Corridor SMA, High Country SMA, and Salt Creek area. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO).

These areas support the same types of habitat that would be lost through construction and would be further enhanced through ongoing restoration and management activities. Some of these activities would include the establishment of native vegetation communities in currently disturbed habitat, a reduction in cattle grazing except where grazing may be used as a management tool to control exotics, the removal of agricultural practices, and the management of exotic species. These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to coastal scrub communities in the project area.

The restoration of temporarily disturbed coastal scrub communities has a suite of challenges, not least of which is depleted or nonexistent native seed banks (Cione *et al.* 2002). Semi-arid shrub ecosystems are often colonized by exotics such as brome grasses, due in part to high levels of nitrogen deposition associated with automobile emissions (Allen 2004; Cox and Allen 2008) and type conversion following more frequent fires (Allen 1998). As many areas of the RMDP are already colonized by weedy annuals, restoration efforts will require diligence to ensure the effective replacement of lost functional services/values. Restoration of shrublands or disturbed areas consisting of primarily exotic seed banks is also problematic in that there is little to no natural recruitment of native species, and the establishment of native species is reliant on seeding and planting (Cione *et al.* 2002). However, the applicant would implement measures to ensure the establishment of native riparian and upland vegetation communities in temporarily disturbed areas. Temporary impacts to vegetation communities would be mitigated through restoration and revegetation, with the intent of restoring the functional services/values of the habitat prior to disturbance. These temporary disturbance areas would not all be restored to the same coastal scrub associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include coastal scrub at higher elevations along the channel banks.

Further protection of this vegetation type would be achieved though the use of buffers and monitored perimeters as described for riparian vegetation communities; and California annual grassland, agriculture, and disturbed land. To further reduce the impacts of the proposed RMDP from accidental clearing or trampling of vegetation the applicant would implement previously incorporated Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA); SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the River Corridor SMA and the High Country SMA); and BIO-52 (pre-construction educational

meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities). Implementation of these measures would reduce these effects to less-than-significant levels.

Following development, the continued preservation of this vegetation community would be accomplished through restricted access, long-term management, and dedication of the River Corridor SMA, High Country SMA, and Salt Creek area. To further reduce the impacts of the proposed Project, the applicant would implement previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA); and BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). Implementation of these measures would reduce these effects to less-than-significant levels.

Long-term management activities would include a reduction in cattle grazing except where grazing may be used as a management tool to control exotics, and the management of exotic species within restoration areas associated with the RMDP. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA), and SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126), BIO-20 (preservation of approximately 1,900 acres of coastal scrub on site), BIO-21 (restoration/enhancement of coastal scrub in High Country SMA, Salt Creek area, and River Corridor SMA), and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO). These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to coastal scrub vegetation communities. These areas support the same types of habitat that would be lost through construction and would be further enhanced through management activities.

Implementation of these mitigation measures would reduce this impact to a level that would be adverse but not significant for Alternative 2. The specific mitigation measures that would be utilized to reduce the direct impacts of the

proposed RMDP to a level that is adverse but not significant (with the exception of BIO-20 and BIO-21, noted above), are identified above in **Table 4.5-30**, Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land.

Indirect Permanent Impacts

The majority of the impacts to scrub communities would occur from build-out of the Specific Plan development, specifically through construction related activities and the development of residential housing, commercial properties, and infrastructure.

Construction activities associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of approximately 1,493 acres of scrub communities, or 34.4% of the total acreage of scrub communities present on site. In relation to each planning area, approximately 1,327 acres of scrub communities would be removed from the Specific Plan planning area, 38 acres would be removed from the VCC development, and 129 acres from the Entrada site (**Table 4.5-27**).

Some scrub communities would be impacted to a greater degree than others. No impacts would occur to burned California sagebrush/undifferentiated chaparral or disturbed California sagebrush – purple sage. However, a total of 768 acres (47.3%) of California sagebrush scrub, 251 acres (60.7%) of California sagebrush – California buckwheat scrub, and 194 acres (49.2%) of California sagebrush – purple sage would be permanently impacted through the indirect effects of the build-out of the Specific Plan, VCC, and Entrada developments. See **Table 4.5-27** for a complete analysis of the vegetation acreages affected by the proposed Project.

Significance Finding: Significant absent mitigation for Alternative 2. While many scrub communities are considered common and are not typically protected by state or federal law the vegetation present in the project area is known to support a variety of sensitive plant and wildlife species. As such the permanent impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would constitute a substantial adverse effect on the vegetation community and would threaten to eliminate the land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

The removal of these vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding for Direct Permanent and Temporary Impacts, above).

The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Mitigation Strategy for Indirect Permanent Impacts

The removal of coastal scrub vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding, Mitigation Strategy for Direct Permanent and Temporary Impacts, and **Table 4.5-30**, Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land, above). To reduce or minimize the large scale removal of vegetation the applicant has proposed the dedication of lands in the High Country SMA, River Corridor SMA, and Salt Creeks area, and in the Open Area. These areas would mitigate the lost vegetation community/land covers by preserving at a 1.5:1 ratio lands supporting the same types of plants and wildlife lost through the implementation of the proposed Project. The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Secondary Impacts

Secondary impacts to scrub communities are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to scrub communities located adjacent to the proposed development areas would be subject to the same types of secondary effects as California annual grassland, agriculture, and disturbed land. This can include impacts due to fugitive dust; runoff, sedimentation, chemical pollution, and erosion; hydrological alterations; litter; and accidental clearing, grading, and trampling. Long-term development-related effects including landscape-level impacts and "edge" effects include the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

The secondary effects of the proposed Project would be the same as described for California annual grassland, agriculture, and disturbed land. The only difference is the magnitude of the effect. The quality of the scrub communities in the project area varies

depending on its location and historic disturbance regime. In some areas the habitat has been severely degraded by cattle grazing while other areas support near pristine scrub communities. Other areas have been subject to recent wildfires and show strong evidence of native recruitment. In addition, many scrub species are crown sprouting which suggests that native plant communities will recover in these areas. Heavily disturbed scrub communities in adjacent areas are less likely to recover if subject to repeated disturbance or other anthropogenic activities.

Secondary effects such as excessive dust from short-term construction-related secondary impacts or altered hydrology can adversely affect these communities and inhibit the recruitment of native plant communities. Similar to California annual grassland, agriculture, and disturbed land this can also lead to the establishment of more disturbed or exotic plant communities. Vegetation can also be crushed through the inadvertent clearing of vegetation located outside the designated project footprint and human activity along the open space-urban interface may also result in the trampling of vegetation and compaction of soils.

Fertilizer and herbicide use could lead to the degradation of adjacent habitats or the spread of exotic plants. Invasive plant species that thrive in edge habitats are a well documented problem along the open space-urban interface in Southern California and semi-arid shrub ecosystems are often colonized by exotics such as brome grasses. The spread of exotic species and increased human presence can lead to altered fire regimes in the project area. As described for California annual grassland, agriculture, and disturbed land altered wildfire regimes and particularly increased incidence of fires may occur in urbanized areas.

Wildfire in Mediterranean type ecosystems such as scrub and chaparral communities affects the structure and function of vegetation communities. In most cases, fires are quickly suppressed for public safety and to protect property, but in some cases fires become uncontrollable and catastrophic, in part because past fire suppression has resulted in much greater fuel loads in urbanized environments than would occur under natural regimes. These types of fire regime alteration (suppression and catastrophic and/or frequent fires) can drastically affect plant and animal communities such as California sagebrush scrub through increases or decreases in the natural fire interval to which the plant and animal communities have adapted. Longer than natural fire intervals can result in excessive buildup of fuel loads, so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities such as chaparral that rely on shorter intervals for rejuvenation. Shorter than natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and, in some cases, result in permanent transitions of the vegetation to nonnative communities such as annual

grassland and weedy communities (*e.g.*, Malanson and O'Leary 1982; Keeley 1987; O'Leary *et al.* 1992). The alteration of vegetation communities consequently has profound effects on the wildlife species communities.

Significance Finding: Significant absent mitigation for Alternative 2. Potential short-term construction-related secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include dust; runoff, sedimentation, erosion, and chemical pollutants; hydrological alterations; litter; and accidental clearing, grading, and trampling. Potential long-term development-related secondary impacts include non-native, invasive plant and animal species; litter; hydrological alterations; increased risk of human disturbance; and increased risk of fire frequency. These short-term and long-term secondary impacts would constitute a substantial adverse effect on the vegetation community, threaten to eliminate this vegetation community on site, and substantially reduce the number or restrict the range of special-status species (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact is significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

In order to reduce short-term and long-term secondary impacts to coastal scrub communities resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant would implement the same general mitigation measures as described for California annual grassland, agriculture, and disturbed land. This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources.

Secondary effects associated with dust, runoff, erosion, sedimentation, and chemical pollutants would be the same as those described for California annual grassland, agriculture, and disturbed land. Mitigation measures have been designed to limit the amount of particulate matter (dust) that leaves the construction area control dust and include actions such as daily watering of disturbed areas and the use of chemical tackifiers. BMPs would also be employed to reduce secondary impacts associated with runoff, erosion, sedimentation, and chemical pollutants. The applicable mitigation measures to reduce impacts from fugitive dust, runoff, erosion, sedimentation, and chemical pollutants include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), SP-4.6-32 (trail design and construction

to minimize impacts to native habitats within the High Country SMA), and SP-4.6-44 and SP-4.6-45 (drainage guidelines); as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone), BIO-46 (requiring the presence of a qualified biologist during stream diversion), BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area), BIO-49 (prevention of mud and pollutants from entering streams and storm flows), BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities), BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs (erosion and dust control, staging/storage area restrictions, equipment maintenance restrictions, trash restrictions) to ensure protection of vegetation communities and special status species), and BIO-71 (dust control measures to protect vegetation communities and special status aquatic wildlife species).

To reduce the effects of invasive and noxious plants or altered fire ecology the applicant would implementation Mitigation Measures SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) and SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs) as well as Mitigation Measures BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation). These measures include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. In addition, FMZs would be located adjacent to structures such as residential and commercial properties to reduce the potential for the spread of wildfires form urban to vegetated areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, and grading, and long-term effects of trampling would be the same measures as those described for California annual grassland, agriculture, and disturbed land. The applicable mitigation measures to reduce impacts from trampling and clearing of vegetation outside of the construction zone include the previously incorporated measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River

Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), as well as Mitigation Measure BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities). These measures include guidance regarding the use of clearly identified construction areas, full-time biological monitoring, the preservation of mitigation lands, and the education of homeowners regarding the sensitivity of natural lands.

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. These include Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-39 (High Country SMA grazing and recreational use restrictions); as well as Mitigation Measures BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2. A summary description of the specific mitigation measures that reduce the secondary impacts of the proposed Project are described in **Table 4.5-31**, Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land.

Summary of Impacts and Mitigation Strategy for Coastal Scrub Vegetation Communities. Construction of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of coastal scrub vegetation communities. Implementation of the RMDP facilities would also result in the temporary loss of these vegetation communities/land covers. In total, implementation of the proposed RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 1,524 acres and the temporary removal of 2.3 acres of the total 4,336 acres of these vegetation communities that occur on site.

Typically, the loss of non-sensitive plant communities including coastal scrub vegetation communities would not be considered a significant impact. These communities are not sensitive, and are locally and regionally abundant. Generally additional mitigation would

not be required unless these communities occur within designated critical habitat for a federally listed species or are known to support special-status plant species or wildlife that utilize these areas for foraging or nesting. Because coastal scrub vegetation communities on site are known to provide important foraging, nesting, and movement areas for special-status plants and wildlife, the permanent land conversion of these vegetation communities would be considered significant.

Implementation of the mitigation measures described for Direct, Indirect, and Secondary Impacts above would reduce the effects of the proposed Project on coastal scrub vegetation communities to less-than-significant levels. These measures include restoration of temporary impact areas, as well as the dedication and preservation of large areas of natural lands intended to off-set the permanent removal of these vegetation communities/land covers. The dedicated areas described in Direct and Indirect Impacts would also be managed for the preservation and enhancement of natural communities.

Secondary impacts from short-term construction include fugitive dust, runoff, accidental clearing, grading, and trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would also be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this project would be implemented to reduce the effects of the proposed Project on coastal scrub vegetation communities. Implementation of these measures would reduce direct, indirect, and secondary impacts to coastal scrub vegetation communities to a level that is adverse but not significant.

Impacts to Chaparral Communities

Existing Conditions. Undifferentiated chaparral scrub is a drought- and fire-adapted community of broad-leafed shrubs, 1.5 to 3.0 meters tall, typically forming dense, impenetrable stands. It develops primarily on mesic north-facing slopes and in canyons. This association is typically a mixture of chamise, hoaryleaf ceanothus (*Ceanothus crassifolius*), scrub oak (*Quercus berberidifolia*), laurel sumac (*Malosma laurina*), and black sage. Dominant chaparral species on site include a mixture of chamise, hoaryleaf ceanothus, spiny redberry (*Rhamnus crocea*), sugar bush, and toyon. Other species that occur in this community on site include chaparral bushmallow, hollyleaf redberry (*Rhamnus ilicifolia*), mainland (hollyleaf) cherry (*Prunus ilicifolia* ssp. *ilicifolia*), and coastal scrub species as described above. Chamise chaparral (at least 60% cover chamise) is a variation of chaparral scrub, with a sparse distribution of other chaparral species. On site, scrub oak chaparral is dominated by scrub oak, and also supports other

chaparral and coastal scrub species. On site, eriodictyon scrub is dominated by an almost monotypic stand of yerba santa, with a sparse distribution of other chaparral and coastal scrub species.

The distribution of this plant community is limited to relatively small areas within the southern portion of the Entrada planning area. Undifferentiated chaparral scrub in the Entrada planning area is relatively intact and undisturbed, and contains typical dominant plant species for this community. This plant community occurs in the higher elevations of the Specific Plan area, primarily in the eastern and southern portions. Undifferentiated chaparral scrub in the Specific Plan area is relatively intact and undisturbed, likely because of its distribution in the higher and steeper elevations, except for burned portions through the center of the Specific Plan along Salt Creek and eastward to Pico Canyon. Chamise chaparral on site is limited to a few locations, including upper Chiquito Canyon, west of lower Long Canyon, along the Specific Plan/Legacy Village boundary in upper Long Canyon, and east of Lion Canyon. Scrub oak chaparral occurs in only one location, in the upper portion of the East Fork of Salt Creek. Eriodictyon scrub occurs in the Specific Plan area along the southern end of Magic Mountain Canyon and is contiguous with an off-site patch on Legacy Village. Chaparral communities provide potential habitat for several special-status plants (Peirson's morning glory, southern California black walnut, and island mountain-mahogany) and special-status wildlife species, including coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, loggerhead shrike, Bell's sage sparrow, black-chinned sparrow, sharp-shinned hawk, and mountain lion.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP and the SCP would result in both permanent and temporary impacts to chaparral vegetation communities. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

The sources of direct impacts (*i.e.*, clearing and grading) to chaparral vegetation communities would be the same as for riparian vegetation communities.

Construction activities associated with the development of RMDP facilities (*e.g.*, buried bank protection, levees, bridges, and ancillary structures) would result in the permanent removal of approximately 26 acres and the temporary removal of

1.5 acre of chaparral communities on site. These impacts would occur to burned undifferentiated, undifferentiated, and chamise chaparral communities. Direct impacts to these communities would include the permanent loss of 21 acres of undifferentiated chaparral, 4.1 acres of burned undifferentiated chaparral, and 1.6 acres of chamise chaparral; and the temporary loss of 0.7 acre of burned undifferentiated chaparral and 0.9 acre of undifferentiated chaparral. Permanent and temporary impacts would not occur to eriodictyon scrub or scrub oak chaparral from implementation of the proposed RMDP. These temporary disturbance areas would not all be restored to the same chaparral associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include chaparral at higher elevations along the channel banks.

As a relative index of the habitat availability on site, approximately 2,146 acres of chaparral communities occur in the proposed RMDP project area. Thus, the approximate loss of these habitats relative to their availability from direct impacts is less than 1.0% of the existing chaparral communities present in the Project area. However, the total percentage of loss of any given community may range from a low of 0% for scrub oak chaparral to approximately 3.0% for chamise chaparral. What is important to recognize is the total percentage of a vegetation community lost only reflects the percent of the habitat that occurs in the project area. That is, while the total percentage of chamise chaparral affected by the proposed project is highest among chaparral communities, the total acreage lost is 1.6 acres out of approximately 56 acres that occur on site. Conversely, undifferentiated chaparral would only be subject to a loss of approximately 2.0% (a total of 21 acres) of the 1,131 acres of this community present in the project area.

Significance Finding: Significant absent mitigation for Alternative 2. In Southern California chaparral communities are locally and regionally abundant. Data compiled from CNDDB lists 1,329,674 acres of chamise chaparral; 54,116 acres of mixed chaparral; and 36,385 acres of scrub oak chaparral occurring within the State of California (CDFG 1995; BLM 2005). Furthermore, much of this habitat in the region is not likely to be developed as it is under state or federal ownership such as the BLM or the USDA Forest Service. In the project area large stands of this community type occur in the Los Padres National Forest and the Angeles National Forest.

Chaparral communities are not considered sensitive by federal, state, or local regulatory agencies. However while relatively common, these communities provide nesting and foraging habitat for numerous special-status wildlife species

within the Project area and the loss of these habitats can result in the spread of noxious or invasive weeds and alter the fire regime of a given area Therefore the loss of these communities associated with the RMDP and SCP study area would constitute a substantial adverse effect on the vegetation community and would threaten to eliminate the land cover type in the Project area. The Project would also have the potential to substantially reduce the number or restrict the range of special-status species listed above (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Chaparral communities would be subject to the same type of construction related impacts as described for Coastal Scrub Vegetation Communities (described above). These effects result from the permanent removal of these vegetation communities from the RMDP planning area. Temporary disturbance to these vegetation communities would also occur from clearing and grading associated with the construction of access roads, grade control structures, buried bank protection, installation of culverts and other improvements. These temporary disturbance areas would not all be restored to the same chaparral associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include chaparral at higher elevations along the channel banks. **Section 4.5.5.1**, Impact Analysis Approach and Methods of this EIS/EIR contains a detailed description of the different direct, indirect, and secondary effects that could occur from the implementation of the proposed RMDP.

The primary difference regarding this vegetation community type is it occurs on steep hillsides and in areas where construction related to the RMDP would be less likely to directly affect large blocks of contiguous habitat. The majority of the impacts to chaparral communities would occur from build-out of the Specific Plan development, specifically through construction related activities and the development of residential housing, commercial properties, and infrastructure.

Another important difference is how temporary project effects would be mitigated through restoration. One goal of restoration is to establish a native community largely free of exotic species (Allen 1998). This requires establishing a stable community resistant to invasion. As previously described for riparian and scrub communities each habitat type have different natural abilities to resist invasion from exotic species. For example, chaparral appears to naturally resist colonization by exotic species more readily than coastal sage scrub, oak woodlands, or native California grasslands (Allen 1998). The ability of chaparral to resist colonization is apparently due to the closed canopy maintained

throughout the dry season, and where openings occur, colonization by exotics can also occur (Allen 1998). Therefore restoration efforts in this community type are likely to fairly successful if adequately managed.

Mitigation Strategy for Direct Permanent and Temporary Impacts

The primary mechanism for mitigating the permanent loss of chaparral communities in the RMDP and Specific Plan area is the implementation of measures designed to mitigate vegetation communities that were lost through construction by the dedication of existing natural lands in the River Corridor SMA, High Country SMA, and Salt Creek area. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO).

These areas support the same types of habitat that would be lost through construction and would be further enhanced through ongoing restoration and management activities. Some of these activities would include the establishment of native vegetation communities in currently disturbed habitat, a reduction in cattle grazing except where grazing may be used as a management tool to control exotics, the removal of agricultural practices, and the management of exotic species within restoration areas associated with the RMDP. These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to chaparral communities in the project area.

Further protection of this vegetation type would be achieved though the use of buffers and monitored perimeters as described for scrub communities. To further reduce the impacts of the proposed RMDP from accidental clearing or trampling of vegetation the applicant would implement previously incorporated Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA); SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the River Corridor SMA and the High Country SMA); and BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing

and grading activities). Implementation of these measures would reduce these effects to less-than-significant levels.

Following development, the continued preservation of this vegetation community would be accomplished through restricted access, long-term management, and dedication of natural areas. Applicable mitigation measures for the long-term maintenance of the River Corridor SMA, the High Country SMA, Salt Creek area, and Open Area include SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA); and BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas), and BIO-73 (permanent fencing along trails in the River Corridor SMA).

Long-term management activities would include a reduction in cattle grazing except where grazing may be used as a management tool to control exotics, and the management of exotic species within restoration areas associated with the RMDP. The specific mitigation measures that would provide for the dedication of open space and management of these areas includes previously incorporated Mitigation Measures SP-4.6-21 through SP-4.6-26 (Open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (Open space dedication of the River Corridor SMA and the High Country SMA), and SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO). These measures provide additional mechanisms to ensure the dedication and management of natural lands and open space to mitigate the effects of the proposed project to chaparral vegetation communities. These areas support the same types of habitat that would be lost through construction and would be further enhanced through ongoing restoration and management activities.

The applicant would implement measures to ensure the establishment of chaparral vegetation in temporarily disturbed areas. Temporary disturbance to vegetation communities would be mitigated through restoration and revegetation, with the intent of restoring the functional services/values of the habitat prior to disturbance. These temporary disturbance areas would not all be restored to the same chaparral associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include chaparral at higher elevations along the channel banks.

Implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. The specific mitigation measures that would be utilized to reduce the direct impacts of the proposed RMDP to a level that is adverse but not significant are identified above in **Table 4.5-30**, Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land.

Indirect Permanent Impacts

The majority of the impacts to chaparral communities would occur from build-out of the Specific Plan development, specifically through construction related activities and the development of residential housing, commercial properties, and infrastructure.

Construction activities associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of approximately 431 acres of chaparral communities, or 20.1% of the total acreage of chaparral communities present on site. In relation to each planning area, approximately 406 acres of chaparral communities would be removed from the Specific Plan planning area and 25 acres would be removed from the Entrada development. No chaparral communities would be removed at the VCC site (**Table 4.5-27**).

Significance Finding: Significant absent mitigation for Alternative 2. While chaparral communities are considered common and are not protected by state or federal law the vegetation present in the project area is known to support a variety of sensitive plant and wildlife species. As such the permanent impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas would constitute a substantial adverse effect on the vegetation community. Construction activities would also have the potential to substantially reduce the number or restrict the range of special status species known to occur in chaparral in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

The removal of these vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding for Direct Permanent and Temporary Impacts, above).

Implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Mitigation Strategy for Indirect Permanent Impacts

The removal of chaparral vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding, Mitigation Strategy for Direct Permanent and Temporary Impacts, and **Table 4.5-30**, Applicable Mitigation Measures for Direct Impacts to California Annual Grassland, Agriculture, and Disturbed Land, above). To reduce or minimize the large scale removal of vegetation the applicant has proposed the dedication and enhancement of lands in the High Country SMA, River Corridor SMA, Salt Creek area, and in the Open Area. These areas would mitigate the lost vegetation community/land covers by preserving at a 1:1 ratio lands supporting the same types of plants and wildlife lost through the implementation of the proposed Project. The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Secondary Impacts

Secondary impacts to chaparral communities are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to chaparral communities located adjacent to the proposed development areas would be subject to the same types of secondary effects as coastal scrub vegetation communities. This can include impacts due to fugitive dust; runoff, sedimentation, chemical pollution, and erosion; hydrological alterations; litter; and accidental clearing, grading, and trampling. Long-term development-related effects including landscape-level impacts and "edge" effects include the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

The secondary effects of the proposed Project would be the same as described for coastal scrub communities. Secondary effects such as excessive dust from short-term construction-related secondary impacts or altered hydrology can adversely affect these communities and inhibit the recruitment of native plant communities. Similar to coastal scrub communities this can also lead to the establishment of more disturbed or exotic plant communities. However, this community type is more resistant to colonization by exotic species that scrub or riparian communities. Vegetation can also be crushed through the inadvertent clearing of vegetation located outside the designated project

footprint and human activity along the open space-urban interface may also result in the trampling of vegetation and compaction of soils.

Fertilizer and herbicide use would have the same effects as described above for coastal scrub communities and could lead to the degradation of adjacent habitats or the spread of exotic plants. The spread of exotic species and increased human presence can lead to altered fire regimes in the project area. As described for coastal scrub communities altered wildfire regimes and particularly increased incidence of fires may occur in urbanized areas. For chaparral communities wildfires may be a significant concern due to the extremely high fuel loads that can develop after decades of altered fire regimes. As described above, in California most fires are quickly suppressed for public safety and to protect property. These types of fire regime alteration can drastically affect plant and animal communities. Longer than natural fire intervals can result in excessive buildup of fuel loads, so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities such as chaparral that rely on shorter intervals for rejuvenation.

Significance Finding: Significant absent mitigation for Alternative 2. Potential short-term construction-related secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include dust; runoff, sedimentation, erosion, and chemical pollutants; hydrological alterations; litter; and accidental clearing, grading, and trampling. Potential long-term development-related secondary impacts include non-native, invasive plant and animal species; litter; hydrological alterations; increased risk of human disturbance; and increased risk of fire frequency. These short-term and long-term secondary impacts would constitute a substantial adverse effect on the vegetation community, threaten to eliminate this vegetation community on site, and substantially reduce the number or restrict the range of special-status species (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

In order to reduce short-term and long-term secondary impacts to chaparral communities resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant will implement the same general mitigation measures as described for California Annual Grassland, Agriculture, and Disturbed Land and Scrub Communities. This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources.

Secondary effects associated with dust, runoff, erosion, sedimentation, and chemical pollutants would be the same as those described for scrub vegetation communities. Mitigation measures have been designed to limit the amount of particulate matter (dust) that leaves the construction area and include actions such as daily watering of disturbed areas and the use of chemical tackifiers. BMPs would also be employed to reduce secondary impacts associated with runoff, erosion, sedimentation, and chemical pollutants. The applicable mitigation measures to reduce impacts from fugitive dust, runoff, erosion, sedimentation, and chemical pollutants include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-44 and SP-4.6-45 (drainage guidelines); as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone), BIO-46 (requiring the presence of a qualified biologist during stream diversion), BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area), BIO-49 (prevention of mud and pollutants from entering streams and storm flows), BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities), BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs (erosion and dust control, staging/storage area restrictions, equipment maintenance restrictions, trash restrictions) to ensure protection of vegetation communities and special status species), and BIO-71 (dust control measures to protect vegetation communities and special status aquatic wildlife species).

To reduce the effects of invasive and noxious plants or altered fire ecology the applicant would implementation Mitigation Measures SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) and SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs) as well as Mitigation Measures BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation). These measures include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. In addition, Fuel Management Zones (FMZ) would be located adjacent to structures such as residential and commercial properties to reduce the potential for the spread of wildfires form urban to vegetated areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated measures SP-4.6-17

(standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, and grading, and long-term effects of trampling would be the same measures as those described for scrub communities. The applicable mitigation measures to reduce impacts from trampling and clearing of vegetation outside of the construction zone include the previously incorporated measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), as well as Mitigation Measure BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities). These measures include guidance regarding the use of clearly identified construction areas, full-time biological monitoring, the preservation of mitigation lands, and the education of homeowners regarding the sensitivity of natural lands.

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. These include Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-39 (High Country SMA grazing and recreational use restrictions); as well as Mitigation Measures BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2. A summary description of the specific mitigation measures that reduce the secondary impacts of the proposed Project are described in **Table 4.5-31**, Applicable Mitigation Measures for Secondary Impacts to California Annual Grassland, Agriculture, and Disturbed Land.

Summary of Impacts and Mitigation Strategy for Chaparral Communities. Construction of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent removal of chaparral vegetation communities. Implementation of the RMDP facilities would also result in the temporary loss of these vegetation communities/land covers. In total, implementation of the proposed RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 457 acres and the temporary disturbance of 1.5 acres of the total 2,146 acres of the chaparral vegetation communities that occur on site. These temporary disturbance areas would not all be restored to the same chaparral associations and alliances as currently present, but would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include chaparral at higher elevations along the channel banks.

Typically, the loss of non-sensitive plant communities including chaparral vegetation communities would not be considered a significant impact. These communities are not sensitive, and are locally and regionally abundant. Generally additional mitigation would not be required unless these communities occur within designated critical habitat for a federally listed species or are known to support special-status plant species or wildlife that utilize these areas for foraging or nesting. Because chaparral vegetation communities on site are known to provide important foraging, nesting, and movement areas for special-status plants and wildlife, the permanent land conversion of these vegetation communities would be considered significant.

Implementation of the mitigation measures described for Direct, Indirect, and Secondary Impacts above would reduce the effects of the proposed Project on chaparral vegetation communities to less-than-significant levels. These measures include restoration of temporary impact areas, as well as the dedication and preservation of large areas of natural lands intended to off-set the permanent removal of these vegetation communities/land covers. The dedicated areas described in Direct and Indirect Impacts would also be managed for the preservation and enhancement of natural communities. The temporary disturbance areas would be converted to native riparian and upland vegetation communities, which may include chaparral at higher elevations along the channel banks.

Secondary impacts from short-term construction include fugitive dust, runoff, accidental clearing, grading, and trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would also be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this project would be implemented to reduce the effects of the proposed Project on chaparral vegetation communities. Implementation of these measures would reduce direct, indirect, and secondary impacts to chaparral vegetation communities to a level that is adverse but not significant.

Impacts to Oak Woodland Communities (Coast Live Oak Woodland, Mixed Oak Woodland, Valley Oak/Grass, Valley Oak Woodland)

Existing Conditions. The oak woodland vegetation communities present in the project area include, coast live oak woodland, mixed oak woodland, valley oak/grass, and valley oak woodland. Coast live oak woodland in the Specific Plan area occurs mostly in the southern half of the area, generally in south-facing canyons and along the Santa Clara River tributaries. In accessible areas along Salt Creek, the understory of this woodland community has been impacted by past and ongoing grazing practices and is dominated by non-native grasses.

Coast live oak woodland provides potential habitat for Cooper's hawk, long-eared owl, and loggerhead shrike and provides nesting habitat and/or acorns that are a food source for a number of wildlife species, including oak titmouse, Lawrence's goldfinch, merlin, sharp-shinned hawk, white-tailed kite, San Bernardino ringneck snake, silvery legless lizard, coast horned lizard, and coastal western whiptail, and provides general cover for larger mammal species such as mountain lion.

Mixed oak woodland occurs in the Specific Plan area within the High Country SMA and Salt Creek area. Mixed oak woodland occurs in patches, typically where other oak woodland associations such as coast live oak woodland and valley oak/grass intergrade, and is typically dominated by aggressive non-native grasses such as bromes. This community provides potential habitat for Cooper's hawk, long-eared owl, and mountain lion, as well as potential nesting habitat for white-tailed kite.

Valley oak/grass appears to coincide with grazing pressure, primarily in the southern portion of the Specific Plan area, where open woodland provides cattle with ideal forage and shade. Valley oak/grass provides potential habitat for Cooper's hawk, golden eagle, turkey vulture, northern harrier, loggerhead shrike, merlin, sharp-shinned hawk, coastal western whiptail, San Bernardino ringneck snake, silvery legless lizard, coast horned lizard, and mountain lion, as well as potential nesting habitat for white-tailed kite.

Valley oak woodland includes a predominance of valley oaks in sufficient numbers to constitute between 20% to 50% cover. Valley oak woodland occurs within the Specific Plan area along Salt Creek and within the southern portion of the High Country SMA and Salt Creek area. This association appears to coincide with grazing pressure, primarily in

the southern portion of the Specific Plan area, where open woodland provides cattle with ideal foraging and shade. Valley oak woodland is found within the High Country SMA and is relatively intact. This community provides potential habitat for long eared owl, Lawrence's goldfinch, Cooper's hawk, loggerhead shrike, sharp shinned hawk, merlin, San Bernardino ringneck snake, coastal western whiptail, coast horned lizard, silvery legless lizard, and mountain lion, as well as potential nesting habitat for white tailed kite.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Construction activities associated with the development of RMDP facilities (*e.g.*, buried bank protection, levees, bridges, and ancillary structures) would result in the permanent removal of 9.3 acres and temporary removal of 1.4 acre of oak woodland communities (including coast live oak woodland, valley oak woodland and valley oak/grass) on site. Direct impacts to coast live oak woodland would include the permanent/temporary loss of 8.3/1.2 acres. Direct impacts to valley oak woodland would be limited to temporary impacts to 0.8/0.1 acre. Direct impacts to valley oak/grass would include the permanent/temporary loss of 0.2/0.0 acre. Permanent and temporary impacts from implementation of the proposed RMDP would not occur to mixed oak woodland. **Table 4.5-27**, Impacts of the Proposed Project to Vegetation Communities and Land Covers, provides a detailed analysis of the vegetation acreage affected by each project component.

As a relative index of the habitat availability on site, approximately 1,468 acres of oak woodland communities occur in the proposed RMDP project area. Thus, the approximate loss of these habitats relative to their availability from direct impacts is less than 1.0% of the existing oak woodland communities present in the Project area. The greatest impacts would occur to coast live oak woodland, of which 8.3 acres (1.1%) would be directly impacted by development of the RMDP.

Significance Finding: Significant absent mitigation for Alternative 2. Statewide, the overall trend for oak woodlands is a decrease in acreage and density, and one important contributing factor is a low rate of regeneration. However, residential development, woodcutting, agriculture, fire, rangeland development, and sudden oak death are all contributing to the decline of oak woodlands throughout the state (Light and Pedroni 2002).

Oak woodlands are a significant biological resource in the project area because they provide nesting and roosting habitat for a number of special-status avian and

bat species. In addition, oak tree communities are protected by various local ordinances that require mitigation for their removal. Valley oak/grass is also considered a special status community by CDFG (2003). Oak communities provide valuable mast (acorn) crops which are important to foraging wildlife, and oak trees are very slow growing. Even modest impacts may take years to replace lost functional values. The permanent and temporary impacts associated with the RMDP would constitute a substantial adverse effect on the vegetation community; may threaten to eliminate this plant community; may substantially reduce the number or restrict the range of an endangered, rare, or threatened species (oak trees are considered special status per the CLAOTO); and may conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (significance criteria 1, 2, 5, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Oak woodland communities would be subject to the same types of construction-related impacts (*i.e.*, clearing and grading) as described for Riparian Vegetation Communities, Coastal Scrub Communities, and Chaparral Communities. These effects result from the permanent removal of these vegetation communities from the RMDP planning area. Temporary disturbance to these vegetation communities would also occur from clearing and grading associated with the construction of access roads, grade control structures, buried bank protection, installation of culverts and other improvements. **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, of this EIS/EIR contains a detailed description of the different direct, indirect, and secondary effects that could occur from the implementation of the proposed RMDP.

For the RMDP only small sections of oak woodlands would be subject to project disturbance. Similar to riparian communities, oak woodlands can be highly susceptible to damage from clearing and grading activities even in areas adjacent to existing oak trees. Repair or widening of existing roads to support construction equipment that occurs under the canopy of oak trees may result in damage to individual trees, limbs, and/or their root systems potentially causing mortality.

These types of disturbances can kill trees and facilitate the expansion or colonization of exotic weeds. Aggressive weeds can inhibit the germination of oak seedling by reducing access to water or light. Increased predation from rodents that occur in weedy areas can also increase the mortality of oak seedlings.

Mitigation Strategy for Direct Permanent and Temporary Impacts

For oak woodlands the primary mitigation strategy is to mitigate lost habitat through the dedication of mitigation lands in the High Country SMA, Salt Creek

SMA, and River Corridor SMA. Open space located with the Project area would also support and protect existing oak trees. These measures include Mitigation Measures SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA), SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA), and SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA). In addition, some of the new measures presented in this document include Mitigation Measures BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) and BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO).

Construction within the driplines of oak trees, and incidental trimming or damage to trees in the project area would also be reduced through the implementation of Mitigation Measure BIO-42 (protective fencing around oaks during clearing and grading activities). This measure would ensure that clearing (including brush clearing) or areas to be graded shall be enclosed in a temporary fenced zone for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone (*i.e.*, the area at least 15 feet from the trunk or five feet beyond the drip line, whichever distance is greater). No parking or storage of equipment, solvents, or chemicals that could adversely affect the trees shall be allowed within 25 feet of the trunk at any time. Removal of the fence shall occur only after the Project arborist or qualified biologist confirms the health of preserved trees. Use of this measure would reduce the effects of construction to less-than-significant levels.

To further reduce the effects of the RMDP on oak woodlands, oak tree replacement in, or adjacent to, existing oak woodlands and savannahs would also occur. While many county and city oak tree protection ordinances focus on individual trees, the functional unit that should be considered for restoration is the oak woodland. Mitigation such as restoration and compensation should focus on oak woodlands rather than a certain number or size of individual trees (Light and Pedroni 2002). Protecting trees only over a certain size results in loss of woodlands as the younger components of the woodland are removed, and structural complexity is lost. The mitigation measures proposed to replace impacted oak tree habitat; restore, enhance, and maintain the communities on site; and create new or expand existing oak woodland communities do consider the community as a whole. These measures would replace the lost habitat and provide for the long-term perseveration of oak communities in the project area. The three-part strategy incorporates (1) planting replacement trees, per the requirements of CLAOTO and previously incorporated Mitigation Measure SP-4.6-48; (2) additional replacement ratios recommended in this EIS/EIR for

impacts to oak trees and oak woodlands where they occur within stream channels falling under CDFG and Corps jurisdiction, per 1600 and 404 (BIO-2); and (3) additional measures recommended in this EIS/EIR for tree replacement or woodland restoration/enhancement to mitigate for oak trees and woodland occurring in uplands, outside CDFG and Corps jurisdiction (BIO-22).

The project's impacts to oak trees and oak woodlands are related but are not identical. Losses of oak trees are to be mitigated by planting replacement trees (per the requirements of CLAOTO, BIO-22b, and previously incorporated Mitigation Measure SP-4.6-48), supplementing those numbers with additional replacement trees as described in BIO-22c (for upland oak trees) and BIO-2.

This EIS/EIR requires additional oak woodland replacement at a range of 2:1 to 3:1 for any oak woodland lost within jurisdictional streambeds (BIO-2) and at a ratio of 1:1 for woodland acreages lost outside of jurisdictional areas (BIO-22d). For impacts to upland oak woodlands, Newhall Land may enhance existing degraded woodland areas, at the increased ratio of 2:1.

All oak trees to be planted for CLAOTO compliance will be subject to species and performance criteria as specified in CLAOTO (see BIO-22b). Where CLAOTO replacement trees are planted in natural open areas such as the High Country and Salt Creek areas, the planting areas will be planted and managed as natural woodlands, to include other characteristic woodland species and to provide habitat for a broader variety of wildlife than is possible in close proximity to development.

As described in the Draft Newhall Ranch Mitigation Feasibility Study (Dudek 2007A), potential mitigation sites for three oak vegetation communities—valley oak/grass, coast live oak woodland, and valley oak woodland—were identified in the High Country SMA and Salt Creek area (**Figure 4.5-158**, Newhall Land – Potential Oak Mitigation Sites). A comprehensive evaluation identified approximately 111 acres considered suitable for creating specific oak vegetation communities, including 87 acres of valley oak/grass, 10 acres of coast live oak woodland, and 0.4 acre of valley oak woodland.

In addition, this EIS/EIR requires replacement of oak trees at a ratio of 0.5:1 for oak trees with dbh of 8 to 35 inches, and at a ratio of 2.5:1 for oak trees with dbh of 36 or more inches lost or impacted in uplands (BIO-22c). These trees are in addition to the CLAOTO requirement described above. These additional trees may also be incorporated into woodland habitat enhancement or creation.

This oak mitigation strategy will be outlined in an Oak Resource Management Plan, to be prepared by the applicant and submitted for approval to CDFG and County of Los Angeles, and implemented upon approval. The Plan shall identify areas suitable for oak woodland enhancement and creation. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional measures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and 22d for upland areas).

The Oak Resource Management Plan shall include measures to create or enhance woodlands as follows: (1) locations and acreages of mitigation sites where woodland creation or enhancement will; (2) a description of proposed cover and number of native trees, shrubs and grasses per acre to be established. This description shall be based on comparable intact woodlands in the area of impact or elsewhere within the RMDP planning area, consistent with conditions of the proposed mitigation site; (3) site preparation measures to include (as appropriate) topsoil treatment, soil decompaction, erosion control, weed grow/kill cycle, or as otherwise approved by the agencies; (4) methods for the removal of non-native plants (e.g., mowing, weeding, raking, herbicide application, or burning); (5) a plant palette listing all species, including sizes, planting densities, or seeding rates, to be based on target vegetation; (6) the source of all plant propagules (seed, potted nursery stock, etc) and the quantity and species of seed or potted stock of all plants to be introduced or planted into the mitigation areas; (7) temporary irrigation, protection from herbivores, fertilizer, weeding, etc; (8) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than 5 years total and no less than 2 years after removal of irrigation (if any); (9) where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the mitigation areas shall be implemented as needed; (10) tree protection standards to be implemented for individual trees or woodlands adjacent to development activity; (11) success criteria as stated in BIO-22b and BIO-22d; and (12) contingency measures, such as replanting, erosion control, irrigation system repair, or understory re-seeding, to be implemented if habitat improvement / restoration efforts do not meet the success criteria stated in the plan. The Oak Resource Management Plan would reduce impacts to oak woodland communities by replacing and enhancing habitat in the project area.

The primary measures that would be implemented to restore or enhance habitat within riparian the River Corridor and the High Country SMA include the previously incorporated measures SP-4.6-1 through SP-4.6-16 and SP-4.6-63

(habitat restoration/enhancement in the River Corridor SMA; 1:1 riparian resource replacement), SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA), SP-4.6-28 (mitigation banking for various habitat types in the High Country SMA), SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub), SP-4.6-47a (allowing mitigation banking for riparian habitats, oak resources, and Mexican elderberry within the River Corridor SMA, High Country SMA, and Open Area), as well as new Mitigation Measures BIO-1 through BIO-16 (wetlands mitigation plan and riparian restoration activities on the Project site). CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

The applicant would implement measures to ensure the establishment of oak woodland vegetation in temporarily disturbed areas. Temporary impacts to vegetation communities would be mitigated through restoration and revegetation, with the intent of restoring the functional services/values of the habitat prior to disturbance

Further protection of vegetation communities would be achieved through the creation of buffers and biologically monitored perimeters during construction periods. Biologically monitored perimeters would limit the potential for the contractor to disturb vegetation outside the proposed construction footprint. The use of these measures would identify the limits of construction and provide a biological monitor to review the construction area in the field with the contractor and be present during initial vegetation clearing and grading. To further reduce the impacts of the proposed RMDP from accidental clearing or trampling of vegetation the applicant would implement previously incorporated Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA); SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA); and BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities). Implementation of these measures would reduce these effects to less-than-significant levels.

Following development, continued preservation of the dedicated areas would be accomplished through restricted access and long-term management of the River Corridor SMA, High Country SMA, and Salt Creek area. The use of buffers

would limit the potential for the spread of exotic weeds and limit the potential for the spread of wildfires (buffers are described in detail under Secondary Impacts of the Proposed Project). To further reduce the impacts of the proposed Project, the applicant would implement previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA); and BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). Implementation of these measures would reduce these effects to less-than-significant levels.

The implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. The specific mitigation measures that reduce the direct permanent and temporary impacts of the proposed RMDP to a level that is adverse but not significant are identified below in **Table 4.5-32**.

Table 4.5-32
Applicable Mitigation Measures for Direct Impacts to Oak Woodland Vegetation Communities

Mitigation Measure(s)	Issue Mitigating
SP-4.6-1 through SP-4.6-16 (habitat restoration/enhancement in the River Corridor SMA)	Vegetation Removal
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Vegetation Removal
SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA)	Vegetation Removal
SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA)	Vegetation Removal
SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA)	Vegetation Removal
SP-4.6-26a (riparian revegetation and oak tree replacement opportunities in the High Country SMA)	Vegetation Removal
SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA)	Vegetation Removal
SP-4.6-28 (mitigation banking for various habitat types in the High Country SMA)	Vegetation Removal
SP-4.6-34 (marking and inspection of grading perimeters prior to impacts within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-35 (avoidance of inadvertent impacts to biological resources within or adjacent to the High Country SMA)	Vegetation Removal
SP-4.6-36 through SP-4.6-42 (open space dedication of the High Country SMA)	Vegetation Removal
SP-4.6-43 (Open Area use for mitigation of riparian or oak resources or elderberry scrub)	Vegetation Removal
SP-4.6-47a (allowing mitigation banking for riparian habitats, oak resources, and Mexican elderberry within the River Corridor SMA, High Country SMA, and Open Area)	Vegetation Removal
SP-4.6-48 (restoration and enhancement of oak resources in the High Country SMA and Open Area)	Vegetation Removal

Table 4.5-32
Applicable Mitigation Measures for Direct Impacts to Oak Woodland Vegetation Communities

Mitigation Measure(s)	Issue Mitigating
SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA; 1:1 riparian resource replacement)	Vegetation Removal
BIO-1 through BIO-16 (wetlands mitigation plan and riparian restoration activities on the Project site)	Vegetation Removal
BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126)	Vegetation Removal
BIO-22 (preparation and implementation of an Oak Resource Management Plan identifying areas suitable for oak woodland enhancement and creation)	Vegetation Removal
BIO-42 (protective fencing around oaks during clearing and grading activities)	Vegetation Removal
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Vegetation Removal
BIO-62 (dedication to the public of at least 1,900 acres of Open Area to an NLMO)	Vegetation Removal
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Vegetation Removal
BIO-73 (permanent fencing along trails in the River Corridor SMA)	Vegetation Removal

Indirect Permanent Impacts

The indirect impacts to oak woodland communities would occur from build-out of the Specific Plan development, specifically through construction related activities and the development of residential housing, commercial properties, and infrastructure.

Construction activities associated with the build-out of the Specific Plan area would result in the permanent removal of approximately 85 acres of oak woodland communities (primarily in canyons south of the Santa Clara River and ridges south of Potrero Canyon), or 5.8% of the total acreage of oak woodland communities present on site. In relation to each oak woodland type, approximately 60 acres of coast live oak woodland, 21 acres of valley oak/grass, 4.7 acres of valley oak woodland, and no acreage from mixed oak woodland would be removed from the Specific Plan planning area. Impacts to oak woodlands would not occur from the build-out of the VCC and Entrada planning areas (**Table 4.5-27**).

As described in **Subsection 4.5.5.1**, Impact Analysis Approach and Methods, there are no temporary impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas as all construction-related activities would occur within the proposed development footprint.

Significance Finding: Significant absent mitigation for Alternative 2. These permanent impacts have the potential to have a substantial adverse effect on the vegetation community; may threaten to eliminate this plant community; may substantially reduce the number or restrict the range of an endangered, rare, or threatened species; and may conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (significance criteria 1, 2, 5, and 7). This impact would be significant for Alternative 2.

The removal of these vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding for Direct Permanent and Temporary Impacts, above).

The implementation of these mitigation measures would reduce this impact to a level that would be adverse but not significant for Alternative 2.

Mitigation Strategy for Indirect Permanent Impacts

The removal of oak woodland vegetation communities from the build-out of the Specific Plan, VCC, and Entrada planning areas and the applicable mitigation measures would be the same as described for direct impacts associated with implementation of the RMDP (see Significance Finding, Mitigation Strategy for Direct Permanent and Temporary Impacts, and **Table 4.5-32**, Applicable Mitigation Measures for Direct Impacts to Oak Woodland Vegetation Communities, above). To reduce or minimize the large-scale removal of vegetation the applicant has proposed the dedication and enhancement of lands in the High Country SMA, River Corridor SMA, Salt Creek area, and in the Open Area. These areas would mitigate the lost vegetation community/land covers and consist of lands supporting the same types of plants and wildlife lost through the implementation of the proposed Project. In addition, oak tree buffers adjacent to development and oak tree replacement in High Country SMA, River Corridor SMA, Salt Creek area, and in open space would further minimize impacts to oak woodlands vegetation communities. The implementation of these mitigation measures would reduce this impact to a level that is adverse but not significant for Alternative 2.

Secondary Impacts

Secondary impacts to oak woodland communities are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to oak woodland communities located

adjacent to the proposed development areas would be subject to the same types of secondary effects as scrub vegetation communities. This can include impacts due to fugitive dust; runoff, sedimentation, chemical pollution, and erosion; hydrological alterations (causing water stress to the root systems even though no visible damage to the tree occurs); litter; and accidental clearing, grading, and trampling. Long-term development-related effects including landscape-level impacts and "edge" effects include the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

The primary concern to oak woodland communities from secondary effects of the proposed Project would be altered hydrology, soil compaction, exotic weeds, and altered fire regimes. Altered hydrology that results in increase soil moisture beyond what the specific tree has acclimated to may lead to mortality over time. With large oaks, the concern is that increases in moisture and other deleterious effects may take years to be recognized. Fertilizer and herbicide can also have slow but permanent effects to established oak trees. The spread of exotic species and increased human presence can further lead to soil compaction, low seedling establishment, and lead to altered fire regimes in the project area.

As described for riparian and scrub communities altered wildfire regimes and particularly increased incidence of fires may occur in urbanized areas. Frequent wildfires in oak woodland communities may remove small trees from the planning area and ultimately lead to senescence of oak tree populations. Where extremely high fuel loads have developed after decades of altered fire regimes, high intensity fires can kill or substantially affect existing oak populations.

Significance Finding: Significant absent mitigation for Alternative 2. Potential short-term construction-related secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include dust; runoff, sedimentation, erosion, and chemical pollutants; hydrological alterations; litter; and accidental clearing, grading, and trampling. Potential long-term development-related secondary impacts include non-native, invasive plant and animal species; litter; hydrological alterations; increased risk of human disturbance; and increased risk of fire frequency. These short-term and long-term secondary impacts would constitute a substantial adverse effect on the vegetation community; threaten to eliminate this vegetation community on site; may conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and substantially reduce the number or restrict the range of special-status species (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact is significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

In order to reduce short-term and long-term secondary impacts to oak woodland communities resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant will implement the same general mitigation measures as described for Riparian Communities and Scrub Communities.

Secondary effects associated with dust, runoff, erosion, sedimentation, and chemical pollutants would be the same as those described for riparian vegetation communities. Mitigation measures have been designed to limit the amount of particulate matter (dust) that leaves the construction area and include actions such as daily watering of disturbed areas and the use of chemical tackifiers. BMPs would also be employed to reduce secondary impacts associated with runoff, erosion, sedimentation, and chemical pollutants. The applicable mitigation measures to reduce impacts from fugitive dust, runoff, erosion, sedimentation, and chemical pollutants include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-44 and SP-4.6-45 (drainage guidelines); as well as Mitigation Measures BIO-45 (pre-construction diversion of all stream flows within a work zone), BIO-46 (requiring the presence of a qualified biologist during stream diversion), BIO-47 (slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area), BIO-49 (prevention of mud and pollutants from entering streams and storm flows), BIO-52 (pre-construction educational meetings, construction limit staking, and biological monitoring during vegetation clearing and grading activities), BIO-70 (project design features, construction notes, erosion and dust control, and SWPPP BMPs (erosion and dust control, staging/storage area restrictions, equipment maintenance restrictions, trash restrictions) to ensure protection of vegetation communities and special status species), and BIO-71 (dust control measures to protect vegetation communities and special status aquatic wildlife species).

The effects of invasive and noxious plants or altered fire ecology on oak vegetation communities would occur. To offset this impact, the applicant would require the implementation of mitigation measures that include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural

areas. Some of the specific measures include previously incorporated Mitigation Measures SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) and SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs; as well as Mitigation Measure BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation).

In addition, FMZs would be located adjacent to structures such as residential and commercial properties. Measures to control the use of motorized vehicles in the High Country and River Corridor SMA, authorize the use of designated trails only, and restrict smoking in natural areas would also be the same as for riparian communities. During construction, the applicant would develop and implement a fuel modification plan that specifically addresses the use of welding equipment and designated fire watches in vegetated areas, ensures vehicles are equipped with spark arrestors, and identifies approved smoking areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, and grading, and long-term effects of trampling and litter would be the same as those described for riparian communities. These impacts would be minimized through the use of clearly identified construction areas, full-time biological monitoring, the preservation of mitigation lands, and the education of homeowners regarding the sensitivity of natural lands. These include Mitigation Measures SP-4.6-20 (marking and inspection of grading perimeters; avoiding inadvertent impacts to riparian resources in the River Corridor SMA), SP-4.6-34 and SP-4.6-35 (guidelines for grading activities in the High Country SMA); as well as BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities).

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. These include Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-29 through SP-4.6-32 (recreational usage and access restrictions within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), and SP-4.6-39 (High Country SMA grazing and

recreational use restrictions); as well as Mitigation Measures BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas) and BIO-73 (permanent fencing along trails in the River Corridor SMA). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. A concise summary of the specific mitigation measures that reduce the secondary impacts of the proposed Project are described above in **Table 4.5-29**, Applicable Mitigation Measures for Secondary Impacts to Riparian Vegetation Communities.

Summary of Impacts and Mitigation Strategy for Oak Woodland Communities (Coast Live Oak Woodland, Mixed Oak Woodland, Valley Oak/Grass, Valley Oak Woodland). Construction of RMDP facilities and build-out of the proposed development would both result in the permanent removal of oak woodland vegetation communities from the planning area. Implementation of the RMDP facilities would also result in the temporary loss of riparian vegetation communities. In total, implementation of the proposed RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 95 acres and the temporary removal of 1.4 acres of the total 1,468 acres of oak woodland communities that occur on site. Implementation of the SCP would not directly impact any oak woodland vegetation community. The direct and indirect impacts associated with the proposed project would result in significant impacts absent mitigation.

Implementation of the mitigation measures described for Direct, Indirect, and Secondary Impacts above would reduce the effects of the proposed Project on oak woodland vegetation communities to less-than-significant levels. These measures include creation, enhancement, and/or restoration of oak woodland vegetation communities, as well as the dedication and preservation of large areas of natural lands intended to off-set the permanent removal of riparian vegetation. The dedicated areas described in Direct and Indirect Impacts would also be managed for the preservation and enhancement of natural communities. These measures would ultimately be designed to mitigate impacted oak woodland communities by restoring, enhancing, and maintaining natural oak woodland vegetation communities; and creating new oak woodland vegetation communities after development.

Secondary impacts from short term construction include fugitive dust, runoff, accidental clearing, grading, and trampling; or long-term development-related impacts from

urbanization or "edge" effects that generally occur along the open space urban interface would also be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this project would be implemented to reduce the effects of the proposed Project on riparian vegetation communities. Implementation of these measures would reduce direct, indirect, and secondary impacts to this vegetation class to a level that is adverse but not significant.

Impacts to Purple Needlegrass Grasslands

Existing Conditions. Purple needlegrass grasslands in the project area provide nesting and foraging habitat for species such as Swainson's hawk, golden eagle, turkey vulture, merlin, loggerhead shrike, California horned lark, prairie falcon, grasshopper sparrow, tricolored blackbird, sharp-shinned hawk, and northern harrier. Other wildlife, such as coastal western whiptail, San Bernardino ringneck snake, coast horned lizard, and silvery legless lizard also utilize purple needlegrass.

Although purple needlegrass grassland is not considered a special-status community by CDFG (2007d), for purposes of this document, this vegetation community is considered to be special-status. This needlegrass grassland is defined as containing at least 10.0% of vegetative cover composed of perennial, native grasses. Purple needlegrass grassland is rare in southern California even though it typically includes non-native annual species intermixed with native perennial grasses and forbs. There is less than 1.0 acre of purple needlegrass grassland in the Project area, located in the Salt Creek area in the south-central portion of the Specific Plan area.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

The purple needlegrass grassland occurs within the High Country SMA and implementation of the proposed RMDP and the SCP would not result in permanent or temporary impacts to this community.

Significance Finding: No impact for Alternative 2. Development of the proposed RMDP and the SCP would not directly impact purple needlegrass grassland. Construction activities would avoid this vegetation community.

Therefore, there would be no impact to purple needlegrass grassland from the development of the RMDP and the SCP and no mitigation would be required.

Mitigation Strategy

None required.

Indirect Permanent Impacts

Purple needlegrass grasslands are not known to occur in the VCC or Entrada sites and would not be impacted by build-out of these areas. This vegetation community does occur in a limited area within the Salt Creek area in the south-central portion of the Specific Plan area; however, development of the Specific Plan area would not occur in areas supporting purple needlegrass grassland. Therefore impacts to purple needlegrass grassland would not occur.

Significance Finding: No impact for Alternative 2. The build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the permanent land conversion of any purple needlegrass grassland. Therefore, there would be no impact to this community and no mitigation would be required.

Mitigation Strategy

None required.

Secondary Impacts

Secondary impacts are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to purple needlegrass grassland would consist of the same types of secondary impacts discussed above under effects to riparian communities and upland scrub and chaparral communities. These impacts include effects from fugitive dust, runoff, sedimentation, chemical pollution, erosion, litter, and accidental clearing. A proposed trail would be located within several hundred feet of the purple needlegrass, and trampling by pedestrians leaving the trail could also occur. Long-term development-related effects including landscape-level impacts and "edge" effects including the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

Significance Finding: Significant absent mitigation for Alternative 2. The secondary effects to purple needlegrass grassland would be the same as those described for Riparian Vegetation Communities and California Annual Grassland, Agriculture, and Disturbed Land. Purple needlegrass can be composed of up to 90.0% exotic species, but this

community is still considered rare and worthy of consideration by CDFG (2003) and provides habitat for several special-status species as described above. Therefore, any loss or damage to this vegetation community is considered significant absent mitigation.

Increases in human activity along the open space-urban interface would also be the same as described above for riparian communities. The proposed trail, located several hundred feet away from the purple needlegrass grassland, would increase the risk of trampling, which could also lead to soil compaction and changes in hydrology. This can affect the long-term viability of plant communities and degrade wildlife habitat quality. Trampling of vegetation and compaction of soils also interacts with the soil chemistry and can affect soil moisture, water penetration, surface flows, and erosion.

As described above, urbanization can affect the natural fire regime and lead to increased and higher-intensity wildfires. Although California native grasslands are adapted to fire, the increased frequency and intensity of altered fire regimes can lead to type conversion to a more exotic or disturbed vegetation community.

These short-term and long-term secondary impacts would constitute a substantial adverse effect on purple needlegrass grassland and would threaten to eliminate this land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

The purple needlegrass grassland occurs in the High Country SMA, well away from the proposed residential and commercial development. This vegetation community occurs several hundred feet away from a proposed trail and the secondary impacts are primarily related to increased fire frequency and the risk of trampling.

In order to reduce short-term and long-term secondary impacts to purple needlegrass grassland resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant would implement the same general mitigation measures as described for California Annual Grassland, Agriculture, and Disturbed Land (**Mitigation Strategy for Secondary Impacts**). This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources.

This vegetation community would be subject to the effects of invasive and noxious plants or altered fire ecology. The applicant would require the implementation of mitigation measures that include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. Some of the specific measures include previously incorporated Mitigation Measures SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs); as well as Mitigation Measure BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation).

In addition, FMZs would be located adjacent to structures such as residential and commercial properties. Measures to control the use of motorized vehicles in the High Country and River Corridor SMA, authorize the use of designated trails only, and restrict smoking in natural areas would also be the same as for riparian communities. During construction, the applicant would develop and implement a fuel modification plan that specifically addresses the use of welding equipment and designated fire watches in vegetated areas, ensures vehicles are equipped with spark arrestors, and identifies approved smoking areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. This includes Mitigation Measure BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. A concise summary of the specific mitigation measures that reduce the secondary impacts of the proposed Project are

described below in **Table 4.5-33**, Applicable Mitigation Measures for Secondary Impacts to Purple Needlegrass.

Table 4.5-33
Applicable Mitigation Measures for Secondary Impacts to Purple Needlegrass

Mitigation Measure(s)	Issue Mitigating
SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA)	Fire frequency
SP-4.6-31 (prohibition of hunting, fishing, motor or trail bikes within the High Country SMA)	Fire frequency
SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA)	Fire frequency
SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs)	Invasive plants; fire frequency
SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs)	Fire frequency
BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas)	Trampling and littering
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Invasive plants

Summary of Impacts and Mitigation Strategy for Purple Needlegrass. Construction of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the permanent or temporary loss of purple needlegrass grassland.

Implementation of the mitigation measures described for secondary impacts above would reduce the effects of the proposed Project on purple needlegrass grassland. Secondary impacts from short-term construction include trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the mitigation measures described for this project would be implemented to reduce the effects of the proposed Project on purple needlegrass grassland. Implementation of these measures would reduce secondary impacts to purple needlegrass grassland to a level that is adverse but not significant.

Impacts to California Walnut Woodland

Existing Conditions. California walnut woodland is found very locally in the southwestern corner of the Specific Plan, mostly within the Salt Creek area on south-facing slopes. California walnut woodland provides potential habitat for loggerhead shrike, sharp-shinned hawk, merlin, San Bernardino ringneck snake, coastal western whiptail, silvery legless lizard, and coast horned lizard.

California walnut woodland is considered a special-status community by CDFG (2007d). There are 27.2 acres of California walnut woodland in the Project area, located in the Salt Creek area in the south-central portion of the Specific Plan area. Individual southern California walnut trees are found throughout the RMDP and SCP area and have been observed in a variety of vegetation communities, sometimes as the dominant species of California walnut woodland, and sometimes as an occasional component of undifferentiated chaparral, coastal scrub alliances and associations, and alluvial scrub, oak woodland (coast live oak woodland, mixed oak woodland and forest, valley oak woodland), and southern cottonwood–willow riparian.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

A total of 27 acres of California walnut woodland occur on site and would not be impacted by development of RMDP facilities.

Significance Finding: No impact for Alternative 2. Development of the proposed RMDP and the SCP would not directly impact populations of California walnut woodland. Construction activities would avoid this vegetation community. Therefore, there would be no impact to California walnut woodland from the development of the RMDP and the SCP and no mitigation would be required.

Mitigation Strategy

None required.

Indirect Permanent Impacts

Indirect impacts to California walnut woodland on site would not occur from build-out of the Specific Plan, VCC, or Entrada planning areas.

Significance Finding: No impact for Alternative 2. The build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the permanent land conversion of California walnut woodland. Therefore, there would be no impact to this community and no mitigation would be required.

Mitigation Strategy

None required.

Secondary Impacts

Secondary impacts are expected to occur both from the implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. Secondary impacts to California walnut woodland would consist of the same types of secondary impacts discussed above under effects to riparian communities and upland scrub and chaparral communities. These impacts include effects from fugitive dust, runoff, sedimentation, chemical pollution, erosion, litter, and accidental clearing. A proposed trail would be located adjacent to the California walnut woodland, and trampling by pedestrians leaving the trail could also occur. Long-term development-related effects including landscape-level impacts and "edge" effects including the increased risk of non-native, invasive plant and animal species, litter, hydrological alterations, human disturbance, and modified fire frequency.

Significance Finding: Significant absent mitigation for Alternative 2. The secondary effects to California walnut woodland would be the same as those described for Riparian Vegetation Communities and California Annual Grassland, Agriculture, and Disturbed Land. This vegetation community is considered special-status by CDFG (2007d) and provides habitat for several special-status species as described above. Therefore, any loss or damage to this vegetation community is considered significant absent mitigation.

Increases in human activity along the open space-urban interface would also be the same as described above for riparian communities. The proposed trail near the occurrence of California walnut woodland would increase the risk of trampling, which could also lead to soil compaction and changes in hydrology. This can affect the long-term viability of plant communities and degrade wildlife habitat quality. Trampling of vegetation and compaction of soils also interacts with the soil chemistry and can affect soil moisture, water penetration, surface flows, and erosion.

As described above, urbanization can affect the natural fire regime and lead to increased and higher-intensity wildfires. Although California native woodlands are adapted to fire, the increased frequency and intensity of altered fire regimes can lead to type conversion to a more exotic or disturbed vegetation community.

These short-term and long-term secondary impacts would constitute a substantial adverse effect on California walnut woodland and would threaten to eliminate this land cover type in the planning area. Construction activities would also have the potential to substantially reduce the number or restrict the range of special-status species known to occur in the planning area (see **Subsection 4.5.5.3**, Impacts to Special-Status Species) (significance criteria 1, 2, and 7). This impact would be significant, absent mitigation, for Alternative 2.

Mitigation Strategy for Secondary Impacts

California walnut woodland occurs in the High Country SMA, well away from the proposed residential and commercial development. This vegetation community occurs adjacent to a proposed trail and the secondary impacts are primarily related to increased fire frequency and the risk of trampling.

In order to reduce short-term and long-term secondary impacts to California walnut woodland resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant will implement the same general mitigation measures as described for Riparian Plant Communities and California Annual Grassland, Agriculture, and Disturbed Land. This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources. The primary difference in the application of mitigation measures is that specific measures related only to riparian plant communities would not apply in upland areas. Otherwise all other measures would be utilized.

In order to reduce short-term and long-term secondary impacts to California walnut woodland resulting from implementation of the RMDP and as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, the Project applicant would implement the same general mitigation measures as described for California Annual Grassland, Agriculture, and Disturbed Land (**Mitigation Strategy for Secondary Impacts**). This would include the existing mitigation measures approved for the Specific Plan EIR and additional measures that are designed to reduce or minimize the effects of the Project on these resources.

This vegetation community would be subject to the effects of invasive and noxious plants or altered fire ecology. The applicant would require the implementation of mitigation measures that include the education of homeowners regarding the sensitivity of natural lands, the use of landscape species that have a limited potential to spread or are considered non-invasive, routine weeding of restored habitat, and the use of buffer areas that physically separate residential landscaping from natural areas. Some of the specific measures include previously incorporated Mitigation Measures SP-4.6-33 (protection of

transition areas along the High Country SMA, including planting palettes and FMZs); as well as Mitigation Measure BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation).

In addition, FMZs would be located adjacent to structures such as residential and commercial properties. Measures to control the use of motorized vehicles in the High Country and River Corridor SMA, authorize the use of designated trails only, and restrict smoking in natural areas would also be the same as for riparian communities. During construction, the applicant would develop and implement a fuel modification plan that specifically addresses the use of welding equipment and designated fire watches in vegetated areas, ensures vehicles are equipped with spark arrestors, and identifies approved smoking areas. Applicable mitigation measures to reduce the potential for increased fire frequency include the previously incorporated Mitigation Measures SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA), SP-4.6-31 (prohibition of hunting, fishing, or motor or trail bikes within the High Country SMA), SP-4.6-32 (trail design and construction to minimize impacts to native habitats within the High Country SMA), SP-4.6-33 (protection of transition areas along the High Country SMA, including planting palettes and FMZs), and SP-4.6-49 through SP-4.6-52 (wildfire fuel modification plan and standards for FMZs).

Short-term impacts resulting from accidental clearing, and grading, and long-term effects of trampling and litter would be the same as those described for riparian communities. These impacts would be minimized through the use of clearly identified construction areas, full-time biological monitoring, the preservation of mitigation lands, and the education of homeowners regarding the sensitivity of natural lands. This includes Mitigation Measure BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities).

Long-term effects of trampling and littering would be reduced through the preservation of mitigation lands, the education of homeowners regarding the sensitivity of natural lands, signage, and fencing. This includes Mitigation Measure BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural habitat areas). While it is inevitable that some human disturbance will occur in natural lands; the applicant will provide designated trails within open areas and natural lands that are intended to provide recreational opportunities in a manner consistent with resource protection and recreational usage.

The implementation of these mitigation measures will reduce this impact to a level that is adverse but not significant for Alternative 2. A concise summary of the specific mitigation measures that reduce the secondary impacts of the proposed Project are

described above in **Table 4.5-33**, Applicable Mitigation Measures for Secondary Impacts to Purple Needlegrass.

Summary of Impacts and Mitigation Strategy for California Walnut Woodland. Construction of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the permanent or temporary loss of California walnut woodland.

Implementation of the mitigation measures described for secondary impacts above would reduce the effects of the proposed Project on California walnut woodland. Secondary impacts from short-term construction include trampling; or long-term development-related impacts from urbanization or "edge" effects that generally occur along the open space urban interface would be reduced or mitigated through the implementation of the previously adopted measures from the Specific Plan EIR and the comprehensive mitigation measures described above.

Both the previously adopted measures from the Specific Plan EIR and the Mitigation Measures described for this project would be implemented to reduce the effects of the proposed Project on California walnut woodland. Implementation of these measures would reduce secondary impacts to California walnut woodland to a level that is adverse but not significant.

4.5.5.2.3.2.2 Impacts to Vegetation Communities and Land Covers—Alternatives 3 through 7

Alternative 3 consists of a larger Entrada Preserve Area than that included in the Proposed Project. This alternative would provide a total of 222 acres of spineflower preserves and would protect 77.2% of the cumulative habitat occupied by spineflower on site. The Potrero Canyon Road Bridge would not be constructed under this alternative. Although major tributaries would be re-graded and realigned under this alternative, the channels would be wider than those of the proposed Project, and the cismontane alkali marsh in lower Potrero Canyon would be avoided.

Alternative 4 consists of larger spineflower preserves and the inclusion of a preserve within the VCC planning area. This alternative would provide a total of 260 acres of spineflower preserves and would protect 82.2% of the cumulative habitat occupied by spineflower on site. The Potrero Canyon Road Bridge would not be constructed under this alternative. Although major tributaries would be re-graded and realigned under this alternative, the cismontane alkali marsh in lower Potrero Canyon would be avoided.

Alternative 5 consists of larger spineflower preserves and the inclusion of a preserve within the VCC planning area. This alternative would provide a total of 339 acres of

spineflower preserves and would protect 84.0% of the cumulative habitat occupied by spineflower on site. Major tributaries would be re-graded and realigned under this alternative, and three bridges would be constructed. No development would be facilitated within the VCC planning area.

Alternative 6 consists of one large spineflower preserve that encompasses all six populations. This alternative would provide a total of 891 acres of spineflower preserves and would protect 88.3% of the cumulative habitat occupied by spineflower on site. Two major roadway bridges would be constructed under this alternative. Major tributaries would be re-graded and realigned under this alternative, and all realigned channels would be many times wider than the proposed Project. The majority of road crossings along the channels would be bridges as opposed to culverts. No development would be facilitated within the VCC planning area.

Alternative 7 was designed to achieve maximal avoidance of cumulative habitat occupied by spineflower. This alternative would provide a total of 661 acres of spineflower preserves and would protect 98.2% of the cumulative habitat occupied by spineflower on site. One roadway bridge would be constructed under this alternative. Major tributaries would not be re-graded or realigned under this alternative. Bank stabilization would be constructed to protect development but would be located outside of the 100-year floodplains of these drainages. In addition, the Middle Canyon and Magic Mountain Canyon drainages would be preserved and would not be converted to buried storm drains as under the proposed Project. No development would be facilitated within the VCC planning area.

Impacts to Riparian Vegetation Communities. The source of impacts (*i.e.*, clearing and grading) to riparian communities under Alternatives 3 through 7 would be the same as the proposed Project, but would vary in magnitude based on the acreages affected. Impacts would primarily result from permanent land use conversion from current uses to urban development.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to riparian vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 90 acres (7.7%) of permanent loss and 110 acres of temporary loss;
- Alternative 4 – 91 acres (7.7%) of permanent loss and 100 acres of temporary loss;
- Alternative 5 – 97 acres (8.1%) of permanent loss and 117 acres of temporary loss;
- Alternative 6 – 74 acres (6.2%) of permanent loss and 107 acres of temporary loss; and
- Alternative 7 – 18 acres (1.5%) of permanent loss and 100 acres of temporary loss.

Compared to Alternative 2, which would result in 116 acres (9.8%) of permanent loss and 103 acres of temporary loss, Alternatives 3 through 7 would have reduced impacts. The difference between the impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under the successive alternatives, which would result in fewer permanent impacts. The temporary loss of riparian vegetation communities would not be substantially different for Alternatives 3 through 7 compared to Alternative 2.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct permanent and temporary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only) and Entrada planning areas would result in the following indirect impacts to riparian vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 85 acres (7.2%) of permanent loss;
- Alternative 4 – 67 acres (5.7%) of permanent loss;
- Alternative 5 – 64 acres (5.4%) of permanent loss;

- Alternative 6 – 36 acres (3.0%) of permanent loss; and
- Alternative 7 – 22 acres (1.8%) of permanent loss.

Compared to Alternative 2, which would result in 109 acres (9.2%) of permanent loss of riparian vegetation communities, Alternatives 3 through 7 would have reduced impacts. Each successive alternative would have fewer impacts because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to riparian vegetation communities.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of riparian vegetation communities. The indirect permanent loss of riparian vegetation communities as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to riparian vegetation communities (**Table 4.5-27**):

- Alternative 3 – 175 acres (14.7%) of permanent loss;
- Alternative 4 – 159 acres (13.3%) of permanent loss;
- Alternative 5 – 161 acres (13.5%) of permanent loss;
- Alternative 6 – 110 acres (9.2%) of permanent loss; and
- Alternative 7 – 39 acres (3.3%) of permanent loss.

Compared to Alternative 2, which would result in 225 acres (18.9%) of combined direct and indirect permanent loss of riparian vegetation communities, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other

Project footprint reductions would occur under the successive alternatives compared to Alternative 2. The combined direct and indirect permanent loss of suitable habitat for riparian vegetation communities occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct and indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of riparian vegetation communities due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to California Annual Grassland, Agriculture, Disturbed Land, and Developed Land. Impacts to California annual grassland, agriculture, disturbed land, and developed land, would consist of the same types of impacts as the proposed Project, and the magnitude of those impacts are largely similar to those of the proposed Project. Impacts to developed land were not significant for the proposed Project and so are not carried forward in the analysis of Alternatives 3 through 7 below.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to California annual grassland, agriculture, and disturbed land (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 197 acres (3.8%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 179 acres (3.5%) of permanent loss and 142 acres of temporary loss;
- Alternative 5 – 234 acres (4.6%) of permanent loss and 118 acres of temporary loss;
- Alternative 6 – 238 acres (4.6%) of permanent loss and 132 acres of temporary loss; and
- Alternative 7 – 112 acres (2.2%) of permanent loss and 438 acres of temporary loss.

Compared to Alternative 2, which would result in 212 acres (4.1%) of permanent loss and 94 acres of temporary disturbance, Alternatives 3 through 6 would not have substantially different impacts. The difference between the impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under the successive alternatives. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Implementation of the proposed SCP would result in native vegetation restoration of California annual grassland, agriculture, and disturbed land within the proposed spineflower preserves.

- Alternative 3 – 105 acres of native vegetation restoration;
- Alternative 4 – 120 acres of native vegetation restoration;
- Alternative 5 – 140 acres of native vegetation restoration;

- Alternative 6 – 302 acres of native vegetation restoration; and
- Alternative 7 – 271 acres of native vegetation restoration.

Compared to Alternative 2, which would result in the restoration of 81 acres of California annual grassland, agriculture, and disturbed land, Alternatives 3 through 6 would result in greater acres of restoration. The difference among the alternatives is that each successive alternative includes successively larger spineflower preserves.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct permanent and temporary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to California annual grassland, agriculture, and disturbed land (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 2,955 acres (57.8%) of permanent loss;
- Alternative 4 – 2,821 acres (55.1%) of permanent loss;
- Alternative 5 – 2,767 acres (54.1%) of permanent loss;
- Alternative 6 – 2,548 acres (49.8%) of permanent loss; and
- Alternative 7 – 2,087 acres (40.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,079 acres (60.2%) of permanent loss of California annual grassland, agriculture, and disturbed land, Alternatives 3 through 7 would have reduced impacts. Each successive alternative would have fewer impacts because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to California annual grassland, agriculture, disturbed land and developed land.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of California annual grassland, agriculture, and disturbed land. The indirect permanent loss of California annual grassland, agriculture, and disturbed land as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to California annual grassland, agriculture, and disturbed land (**Table 4.5-27**):

- Alternative 3 – 3,152 acres (61.6%) of permanent loss;
- Alternative 4 – 3,000 acres (58.6%) of permanent loss;
- Alternative 5 – 3,001 acres (58.6%) of permanent loss;
- Alternative 6 – 2,785 acres (54.4%) of permanent loss; and
- Alternative 7 – 2,200 acres (43.0%) of permanent loss.

Compared to Alternative 2, which would result in 3,291 acres (64.3%) of combined direct and indirect permanent loss of California annual grassland, agriculture, and disturbed land, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other Project footprint reductions would occur under the successive alternatives compared to Alternative 2. The combined direct and indirect permanent loss of suitable habitat for California annual grassland, agriculture, and disturbed land occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct and indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of California annual grassland, agriculture, and disturbed land due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to Scrub Communities. The source of impacts (*i.e.*, clearing and grading) to scrub communities under Alternatives 3 through 7 would be the same as the proposed Project, but would vary in magnitude based on the acreages affected. Impacts would primarily result from permanent land use conversion from current uses to urban development.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to coastal scrub vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 29 acres (0.6%) of permanent loss and 4.5 acres of temporary loss;

- Alternative 4 – 29 acres (0.6%) of permanent loss and 2.0 acres of temporary loss;
- Alternative 5 – 33 acres (0.7%) of permanent loss and 6.0 acres of temporary loss;
- Alternative 6 – 29 acres (0.7%) of permanent loss and 7.6 acres of temporary loss; and
- Alternative 7 – 19 acres (0.4%) of permanent loss and 13 acres of temporary loss.

Compared to Alternative 2, which would result in 31 acres (0.7%) of permanent loss and 2.3 acres of temporary disturbance, permanent and temporary impacts associated with Alternatives 3 through 6 would be substantially the same. The difference between Alternatives 2 and 7 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under the Alternative 7, which would result in fewer permanent impacts and greater temporary impacts to coastal scrub vegetation communities.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall loss of coastal scrub vegetation communities under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct permanent and temporary impacts to coastal scrub vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only) and Entrada planning areas would result in the following indirect impacts to coastal scrub vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 1,415 acres (32.6%) of permanent loss;
- Alternative 4 – 1,374 acres (31.7%) of permanent loss;
- Alternative 5 – 1,322 acres (30.3%) of permanent loss;
- Alternative 6 – 1,094 acres (25.2%) of permanent loss; and
- Alternative 7 – 1,013 acres (23.4%) of permanent loss.

Compared to Alternative 2, which would result in 1,493 acres (34.4%) of permanent loss of coastal scrub vegetation communities, Alternatives 3 through 7 would have reduced impacts. Each successive alternative would have fewer impacts because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to coastal scrub vegetation communities.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of coastal scrub vegetation communities. The indirect permanent loss of coastal scrub vegetation communities as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for indirect permanent impacts to coastal scrub vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to coastal scrub vegetation communities (**Table 4.5-27**):

- Alternative 3 – 1,443 acres (33.3%) of permanent loss;
- Alternative 4 – 1,403 acres (32.4%) of permanent loss;
- Alternative 5 – 1,355 acres (31.3%) of permanent loss;
- Alternative 6 – 1,123 acres (25.9%) of permanent loss; and
- Alternative 7 – 1,032 acres (23.8%) of permanent loss.

Compared to Alternative 2, which would result in 1,524 acres (35.1%) of combined direct and indirect permanent loss of coastal scrub vegetation communities, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other Project footprint reductions would occur under the successive alternatives compared to Alternative 2. The combined direct and indirect permanent loss of suitable habitat for coastal scrub vegetation communities occurring as a result of

implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct and indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of coastal scrub vegetation communities due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to Chaparral Communities. The source of impacts (*i.e.*, clearing and grading) to chaparral communities under Alternatives 3 through 7 would be the same as the proposed Project, but would vary in magnitude based on the acreages affected. Impacts would primarily result from permanent land use conversion from current uses to urban development.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to chaparral vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 25 acres (1.2%) of permanent loss and 1.8 acres of temporary loss;
- Alternative 4 – 27 acres (1.3%) of permanent loss and 1.5 acres of temporary loss;
- Alternative 5 – 27 acres (1.3%) of permanent loss and 1.8 acres of temporary loss;
- Alternative 6 – 24 acres (1.1%) of permanent loss and 1.8 acres of temporary loss; and
- Alternative 7 – 21 acres (1.0%) of permanent loss and 9.1 acres of temporary loss.

Compared to Alternative 2, which would result in 26 acres (1.2%) of permanent loss and 1.5 acres of temporary disturbance, permanent and temporary impacts associated with Alternatives 3 through 7 would be substantially the same, with minor differences associated with variations on the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternatives 3 through 7; the exception being temporary impacts under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts to chaparral vegetation communities.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall loss of chaparral vegetation communities under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct permanent and temporary impacts to chaparral vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the following indirect impacts to chaparral vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 417 acres (19.4%) of permanent loss;
- Alternative 4 – 408 acres (19.0%) of permanent loss;
- Alternative 5 – 409 acres (19.1%) of permanent loss;

- Alternative 6 – 407 acres (18.9%) of permanent loss; and
- Alternative 7 – 327 acres (15.2%) of permanent loss.

Compared to Alternative 2, which would result in 431 acres (20.1%) of permanent loss of chaparral vegetation communities, Alternatives 3 through 7 would have reduced impacts. Each successive alternative would have fewer impacts because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to chaparral vegetation communities.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of chaparral vegetation communities. The indirect permanent loss of chaparral vegetation communities as a result of build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for indirect permanent impacts to chaparral vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would result in the following impacts to chaparral vegetation communities (**Table 4.5-27**):

- Alternative 3 – 443 acres (20.6%) of permanent loss;
- Alternative 4 – 435 acres (20.3%) of permanent loss;
- Alternative 5 – 436 acres (20.3%) of permanent loss;
- Alternative 6 – 431 acres (20.1%) of permanent loss; and
- Alternative 7 – 348 acres (16.2%) of permanent loss.

Compared to Alternative 2, which would result in 457 acres (21.3%) of combined direct and indirect permanent loss of chaparral vegetation communities, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other

Project footprint reductions would occur under the successive alternatives compared to Alternative 2. The combined direct and indirect permanent loss of suitable habitat for chaparral vegetation communities occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct and indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of chaparral vegetation communities due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to Oak Woodland Communities (Coast Live Oak Woodland, Mixed Oak Woodland, Valley Oak/Grass, Valley Oak Woodland). The source of impacts (*i.e.*, clearing and grading) to oak woodland communities under Alternatives 3 through 7 would be the same as the proposed Project, but would vary in magnitude based on the acreages affected. Impacts would primarily result from permanent land use conversion from current uses to urban development.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to oak woodland vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 9.5 acres (0.6%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 4 – 8.9 acres (0.6%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 5 – 13 acres (0.9%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 6 – 18 acres (1.2%) of permanent loss and 1.4 acres of temporary loss; and
- Alternative 7 – 5.6 acres (0.4%) of permanent loss and 13 acres of temporary loss.

Compared to Alternative 2, which would result in 9.3 acres (0.6%) of permanent loss and 1.4 acres of temporary disturbance, permanent and temporary impacts associated with Alternatives 3 through 7 would be substantially the same, with minor differences associated with variations on the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternatives 3 through 7; the exception being temporary impacts under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts to oak woodland vegetation communities.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall loss of oak woodland vegetation communities under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct permanent and temporary impacts to oak woodland vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the following indirect impacts to oak woodland vegetation communities (**Table 4.5-27** and **Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 66 acres (4.5%) of permanent loss;
- Alternative 4 – 65 acres (4.4%) of permanent loss;
- Alternative 5 – 66 acres (4.5%) of permanent loss;
- Alternative 6 – 41 acres (2.8%) of permanent loss; and
- Alternative 7 – 44 acres (3.0%) of permanent loss.

Compared to Alternative 2, which would result in 85 acres (5.8%) of permanent loss of oak woodland vegetation communities, Alternatives 3 through 7 would have reduced impacts. Each successive alternative would have fewer impacts because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to oak woodland vegetation communities.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of oak woodland vegetation communities. The indirect permanent loss of oak woodland vegetation communities as a result of build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for indirect permanent impacts to oak woodland vegetation communities would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would result in the following impacts to oak woodland vegetation communities (**Table 4.5-27**):

- Alternative 3 – 76 acres (5.2%) of permanent loss;
- Alternative 4 – 74 acres (5.0%) of permanent loss;

- Alternative 5 – 79 acres (5.4%) of permanent loss;
- Alternative 6 – 59 acres (4.0%) of permanent loss; and
- Alternative 7 – 50 acres (3.4%) of permanent loss.

Compared to Alternative 2, which would result in 95 acres (6.5%) of combined direct and indirect permanent loss of oak woodland vegetation communities, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other Project footprint reductions would occur under the successive alternatives compared to Alternative 2. The combined direct and indirect permanent loss of suitable habitat for oak woodland vegetation communities occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for direct and indirect permanent impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of oak woodland vegetation communities due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to Purple Needlegrass. Impacts to purple needlegrass grasslands would be the same for Alternatives 3 through 7 compared to the proposed Project.

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

Purple needlegrass grasslands would not be impacted by implementation of Alternatives 3 through 7 nor the proposed Project.

Indirect Permanent Impacts

Purple needlegrass grasslands would not be impacted by implementation of Alternatives 3 through 7 nor the proposed Project.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of purple needlegrass grassland due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

Impacts to California Walnut Woodland. Impacts to California walnut woodland would be the same for Alternatives 3 through 7 compared to the proposed Project

Impacts

Removal of Vegetation

Direct Permanent and Temporary Impacts

California walnut woodland would not be impacted by Alternatives 3 through 7 nor the proposed Project.

Indirect Permanent Impacts

California walnut woodland would not be impacted by Alternatives 3 through 7 nor the proposed Project.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be the same as those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of California walnut woodland due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

The same mitigation measures required for the proposed Project for secondary impacts would be required under Alternatives 3 through 7. These measures are listed above under the proposed Project (Alternative 2) impact analysis.

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4.5.5.2.3.3 *RMDP and SCP Components within Unique Landscape Features*

The RMDP and SCP study areas include three unique landscape features: River Corridor SMA (SEA 23), High Country SMA (SEA 20) and Salt Creek area, and Middle Canyon Spring (**Figure 4.5-39**). These unique landscape features were identified during the development of the Specific Plan as preserve areas and are elements of the larger proposed Project preserve system. Implementation of the RMDP and the SCP would result in the installation of RMDP facilities (and related facilities) and management and monitoring of spineflower preserves. Vegetation community–specific impacts and mitigation are discussed above in **Subsection 4.5.5.2.3.2**. Species-specific impacts and mitigation are discussed below in **Subsection 4.5.5.2.3.4** and **Subsection 4.5.5.3**.

RMDP components and related facilities within the River Corridor SMA would occupy between 31 acres and 86 acres, depending on the alternative (see **Table 4.5-34**). The remainder of the River Corridor SMA would be offered for dedication to the public and managed by an NLMO.

Table 4.5-34
RMDP Components and Related Facilities within the River Corridor SMA by Alternative

	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Direct Permanent	62 acres	44 acres	44 acres	48 acres	39 acres	17 acres
Indirect Permanent	24 acres	23 acres	23 acres	24 acres	16 acres	14 acres
Total	**86 acres**	**67 acres**	**67 acres**	**72 acres**	**55 acres**	**31 acres**

The Middle Canyon Spring occurs within the River Corridor SMA and supports the undescribed snail and undescribed sunflower species. RMDP components and related facilities would not occur within the Middle Canyon Spring for Alternatives 2 through 7. The Middle Canyon Spring Survey and Status Report (Dudek 2007C) will be implemented to monitor and manage biological resources within and adjacent to the Middle Canyon Spring complex.

RMDP components and related facilities within the High Country SMA and Salt Creek area would occupy 27 acres for Alternatives 2 through 7. The remainder of the High Country SMA and Salt Creek area would be offered for dedication to the public and managed by an NLMO.

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4.5.5.2.3.4 *Impacts to Common Wildlife*

This subsection provides an analysis of direct, indirect, and secondary impacts only to common wildlife species that would occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7. The effects to special-status wildlife are addressed in **Subsection 4.5.5.3**. The species addressed in this subsection are not federally or state-listed as threatened or endangered, or otherwise designated sensitive, special-status, or rare species by federal, state, or local agencies, or environmental organizations. The only regulatory protection provided to these common wildlife species is for native birds under the Migratory Bird Treaty Act (MBTA) and Fish and Game Code sections 3503 and 3503.4 (birds of prey), which provides protection for nests, eggs, and nestlings during the breeding season, for species for which hunting or depredation permits are required.

The impacts discussion is organized by wildlife guilds that group common wildlife species on the basis of similar ecological resource requirements and similar roles in the ecological community. As described in **Subsection 4.5.5.1**, Project impacts generally will be similar for species within the same guild. Fourteen wildlife guilds were identified in the Project area:

- Insect
- Mollusk
- Reptile – Low Mobility
- Reptile and Amphibian – Semi-Aquatic
- Fish
- Bird – Raptor
- Bird – Riparian
- Bird – Upland Grassland
- Bird – Upland Scrub and Chaparral
- Bird – Upland Woodland
- Bat
- Mammal – Low Mobility
- Mammal – Moderate Mobility
- Mammal – High Mobility.

Although this subsection focuses on common wildlife in the Project area, there are many special-status wildlife species that are members of these guilds, as listed in **Table 4.5-35**.

The direct, indirect, and secondary impacts for these species are analyzed in species-specific detail in **Subsection 4.5.5.3**.

Table 4.5-35
Special-Status Species Occurring or with Potential to Occur on the Project Site, Organized by Guild

Species Guild	Common Name
Insect (Butterflies)	monarch butterfly (wintering sites)
	San Emigdio blue butterfly
Mollusk	undescribed species of snail
Reptile – Low Mobility	coast horned lizard
	coast patch-nosed snake
	coastal western whiptail
	rosy boa
	San Bernardino ringneck snake
	silvery legless lizard
Reptile and Amphibian – Semi-Aquatic	arroyo toad
	California red-legged frog
	south Coast garter snake
	southwestern pond turtle
	two-striped garter snake
	western spadefoot toad
Fish	arroyo chub
	Santa Ana sucker
	southern steelhead
	unarmored threespine stickleback
Bird – Raptor	American peregrine falcon
	California condor
	Cooper's hawk (nesting)
	ferruginous hawk
	golden eagle (nesting and wintering)
	loggerhead shrike
	long-eared owl (nesting)
	merlin (wintering)
	northern harrier (nesting)
	prairie falcon (nesting)
	sharp-shinned hawk (nesting)
	short-eared owl (nesting)
	turkey vulture
	western burrowing owl (burrow sites)
	white-tailed kite (nesting)
Bird – Riparian	black-crowned night-heron (rookery)
	least Bell's vireo (nesting)
	Nuttall's woodpecker (nesting)

Table 4.5-35
Special-Status Species Occurring or with Potential to Occur on the Project Site, Organized by Guild

Species Guild	Common Name
	willow flycatcher/southwestern willow flycatcher (nesting)
	summer tanager (nesting)
	tricolored blackbird (nesting colony)
	vermilion flycatcher (nesting)
	western yellow-billed cuckoo (nesting)
	yellow-breasted chat (nesting)
	yellow-headed blackbird
	yellow warbler (nesting)
Bird – Upland Grassland	California horned lark
	grasshopper sparrow
Bird – Upland Scrub and Chaparral	Allen's hummingbird (nesting)
	Bell's sage sparrow (nesting)
	black-chinned sparrow (nesting)
	coastal California gnatcatcher
	Costa's hummingbird (nesting)
	rufous hummingbird (nesting)
	southern California rufous-crowned sparrow
Bird – Upland Woodland	chipping sparrow (nesting)
	hermit warbler (nesting)
	Lawrence's goldfinch
	oak titmouse (nesting)
Bat	fringed myotis
	long-legged myotis
	pallid bat
	pocketed free-tailed bat
	Townsend's big-eared bat
	western mastiff bat
	western red bat
	western small-footed myotis
	Yuma myotis
Mammal – Low Mobility	San Diego desert woodrat
	southern grasshopper mouse
Mammal – Moderate Mobility	American badger
	ringtail
	San Diego black-tailed jackrabbit
Mammal – High Mobility	black bear
	mountain lion
	mule deer

The focus of the impact analysis is for common, non-special-status species in each guild. The guild-based impact analyses and significance findings for the guilds and wildlife overall are necessarily generalized and are not intended to address specific or unique impacts to a particular species. This analysis also does not consider the community-wide or community relationship effects of these impacts, such as the effect of the loss of common rodents as prey for special-status species. These types of effects are, however, analyzed in **Subsection 4.5.5.3** in the context of impacts to special-status species. For example, the loss of common rodents due to the effects of rodenticides is considered in the analysis of the Project's effects on special-status raptors or snakes that rely on rodents as prey. Each of the special-status wildlife species is analyzed separately and in much greater detail than provided here for common species at the guild level, including impact significance findings and mitigation for each species on an individual basis.

Significance findings are made for direct, indirect, and secondary (short-term construction-related and long-term development-related) impacts to the common species in each wildlife guild. Where applicable, mitigation measures that would reduce significant impacts to a level less than significant are identified. In addition, although not required by CEQA, where impacts are considered to be adverse but not significant, mitigation measures for other impacts to biological resources that would further reduce these less-than-significant impacts are identified.

It is important to note that the impact acreages reported in this subsection may be different from those reported in **Subsection 4.5.5.3** because habitat types are generalized to be broadly applicable to the guild, while habitat associations are tailored to the individual species in the detailed analyses in **Subsection 4.5.5.3**. Because the habitat types for the guild are more inclusive than in the detailed species analyses, the impacts reported here in many cases overestimate the impact to a particular special-status species in a guild. For example, the southern California rufous-crowned sparrow is part of the Bird – Upland Scrub and Chaparral guild, but at the species-specific level it is considered to only use California sagebrush scrub habitats. Further, the significance findings for impacts to common wildlife may be different from the significance finding for a particular special-status species.

The impact significance criteria described in **Subsection 4.5.4** are applied to the different wildlife guilds discussed below. The three key significance criteria for common wildlife impacts are:

(1) Have a substantial adverse effect, either directly or *via* habitat modifications, on any "special-status species" as such species are defined in **Subsection 4.5.3.1** of this EIS/EIR; or violate any federal, state, or local law which protects biological resources;

(4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; and

(7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species**.**

Insect Guild. Common insects observed on site include more than 35 species of butterflies (Lepidoptera) representing six families: Papilionidae (swallowtails), Nymphalidae (brush footed butterflies), Riodinidae (metalmarks), Lycaenidae (blue, hairstreaks, coppers), Pieridae (white and sulfurs), and Hesperiidae (skippers). Common butterflies species observed on site included checkered white, buckeye, west coast lady, western tiger swallowtail, chalcedon checkerspot, western checkered skipper, common hairstreak, pigmy blue, among others (also see **Subsection 4.5.3.4.3**, General Wildlife, and Compliance Biology, Inc. 2004A, 2004B, 2004C, 2005). These species occur in suitable habitat throughout the site, although many are associated with specific vegetation communities, while others are habitat generalists that may occur in virtually all natural habitats. For example, pigmy blue and acmon blue are abundant throughout Project area in all habitats, including disturbed areas, while Behr's metalmark is abundant, but closely associated with California buckwheat (Compliance Biology 2004C). Only two special-status species are included in the Insect guild: the San Emigdio blue butterfly and the monarch butterfly. These two special-status species are addressed in **Subsection 4.5.5.3**. A variety of other insect taxa also occur on site, including Archeognatha (bristletails), Coleoptera (beetles and weevils), Dermaptera (earwigs), Diptera (true flies, gnats, midges, and mosquitoes), Ephemeroptera (mayflies), Hemiptera (true bugs), Homoptera (cicadas, leafhoppers, aphids, and scale insects), Hymenoptera (ants, bees, and wasps), Mantodea (mantises), Odonata (dragonflies and damselflies), Orthoptera (grasshoppers, locusts, katydids, and crickets), Phasmatodea (stick insects), Psocoptera (lice), Tricoptera (caddisflies) (Jones *et al.* 2004; ABCL 2008).

All vegetation communities and land covers (except developed land) in the Project area are considered suitable habitat for the Insect guild in general because of the broad diversity of habitat relationships in this guild. A total of 14,288 acres of suitable habitat for common species in the Insect guild is present in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in both impacts to insect individuals and permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 394 acres (2.8%) of permanent loss and 201 acres of temporary impact;
- Alternative 3 – 351 acres (2.5%) of permanent loss and 250 acres of temporary impact;
- Alternative 4 – 335 acres (2.3%) of permanent loss and 247 acres of temporary impact;
- Alternative 5 – 404 acres (2.8%) of permanent loss and 244 acres of temporary impact;
- Alternative 6 – 383 acres (2.7%) of permanent loss and 249 acres of temporary impact; and
- Alternative 7 – 172 acres (1.2%) of permanent loss and 572 acres of temporary impact.

The overall loss of potential habitat for common insects in the Project area in general would be relatively small under Alternatives 2 through 7 in relation to the total acreage of vegetation communities and land covers on site. Due to wider channel construction (see **Subsection 4.5.5.2**), Alternative 5 would have the greatest direct permanent impacts to vegetation communities and land covers and Alternative 7 would have the smallest permanent direct impact.

Because of the relatively small amount of habitat loss for the Insect guild species, direct impacts resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in both impacts to common insect individuals and loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 5,200 acres (36.4%) of permanent loss;
- Alternative 3 – 4,941 acres (34.6%) of permanent loss;
- Alternative 4 – 4,736 acres (33.1%) of permanent loss;
- Alternative 5 – 4,629 acres (32.4%) of permanent loss;
- Alternative 6 – 4,311 acres (30.2%) of permanent loss; and
- Alternative 7 – 3,728 acres (26.1%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial impacts to individual insects and loss of their habitat in large portions of the Project area under each alternative. However, the insects observed in the Project area are very common and widespread and therefore will persist in the undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Insect guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Potential short-term construction-related secondary impacts to the Insect guild resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas include inadvertent clearing or trampling of vegetation, including potential host plants, fugitive dust, contact with polluted runoff, and changes in hydrology. The level of these impacts would be similar for Alternatives 2 through 7. Because these impacts would be limited to the period of construction, short-term construction-related impacts would be adverse but not significant under Alternatives 2 through 7.

Potential long-term development-related secondary impacts to the Insect guild include habitat fragmentation and isolation that would occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7. Regional landscape connectivity will be maintained through preservation of the High Country SMA, Salt Creek area, and River Corridor SMA under Alternatives 2 through 7. However, internal habitat connectivity allowing for insect movement and dispersal among open space patches within the developed portions of the Project area will be constrained, although it would differ among the alternatives. As described above for vegetation communities, the potential for insect movement and dispersal along natural drainages will vary depending on whether drainage crossings are bridges or culverts, with bridges providing better conduits for movement beneath them because they are more open and provide a more natural environment. Alternative 2 has relatively more culverts than bridges in the tributary drainages, with progressively fewer culverts and more bridges in successive alternatives.

Members of the Insect guild are also vulnerable to a variety of secondary impacts, such as invasive animal species (*e.g.*, Argentine ant), pesticides and other chemical pollutants, and several types of impacts that can degrade habitat over the long term, including fuel modification practices, invasive plants, soil erosion or compaction, and increased fire

frequency. These potential secondary impacts would be similar for Alternatives 2 through 7.

Although short-term construction-related and long-term development-related secondary impacts to Insect guild species are expected to occur, these species are common and widespread and are expected to persist in the undeveloped portions of the Project area such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area.

Secondary impacts to Insect guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

All direct, indirect, and secondary impacts to Insect guild species were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to Insect guild species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system composed of upland, riparian, and aquatic habitats that support a high diversity of common insect species. It is expected that common insect species will persist in these areas after build-out of the Project area. These mitigation measures also will reduce short-term secondary effects, such as dust during construction; and long-term effects, such as pesticides, pollutants, and non-native species, such as Argentine ant. The key mitigation measures that will reduce impacts to Insect guild species are listed in **Table 4.5-36.**

Table 4.5-36
Applicable Mitigation Measures for Impacts to the Insect Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and	Loss and degradation of habitat. Long-term effects of hydrologic and geomorphic alterations, reduced water quality, non-native plant species.

Table 4.5-36
Applicable Mitigation Measures for Impacts to the Insect Guild

Mitigation Measure(s)	Issue(s) Mitigating
enhancement of existing agricultural undercrossing at SR-126)	
SP-4.6-58 (conformance with NPDES and RWQCB permit provisions) BIO-49 (prevention of mud and pollutants from entering streams and storm flows)	Short-term and long-term effects on water quality.
BIO-64 (develop an integrated pest management (IPM) plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning.
BIO-70 (project design features, construction notes, erosion and dust control, and Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMPs) to ensure protection of vegetation communities and special-status species) BIO-71 (dust control measures to protect vegetation communities and special-status aquatic wildlife species)	Short-term effects of construction on water quality and the effects of excessive dust on habitat quality and prey.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Long-term effects of invasive species.

Mollusk Guild. With the exception of the undescribed snail discovered in Middle Canyon Spring and discussed in detail in **Subsection 4.5.5.3**, the only other documented freshwater snail in the Project area is *Physa* sp., which is generally common in the Santa Clara River and lower Potrero Canyon Creek (Swift 2009). However, the Project area is highly likely to support introduced snails and slugs that are considered to be pest species. The brown garden snail (*Helix aspersa*), which was introduced from France during the 1850s for use as food, and the gray garden slug (*Agriolimax reticulates*), also introduced in the 1800s from Europe, are the most common non-native mollusks and are severe garden and agricultural pests (Flint 2003). Because both the brown garden snail and the gray garden slug are non-native invasive species, there would be no adverse effects of the Project on this guild.

Reptile – Low Mobility Guild. This guild includes several relatively common and sedentary reptile species, including side-blotched lizard, western fence lizard, alligator lizard, gopher snake, common kingsnake, western blindsnake, red coachwhip, California whipsnake, and western rattlesnake (see **Subsection 4.5.3.4.3**, General Wildlife). Special-status species in this guild include coast horned lizard, coast patch-nosed snake, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and silvery legless

lizard, which are analyzed in detail in **Subsection 4.5.5.3.** The common species listed above generally do not have the capacity to move large distances over unsuitable habitat in a short period of time and most of the species probably inhabit the same general area for their entire lifetime. Although there are some differences among these species in their habitat associations, they generally use scrub, chaparral, and grassland habitats, although most also will use river wash and dry riparian areas, such as terrace habitats in the Santa Clara River. The California Natural Diversity Database (CNDDB) (CDFG 2003) general physiognomic and location classification for these habitats is scrub and chaparral, with the addition of California annual grassland (classified as a grass and herb dominated community). A total of 8,782 acres of suitable habitat for common species in the Reptile – Low Mobility guild is present in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in injury or mortality of common reptile individuals in this guild and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 81 acres (0.9%) of permanent loss and 14 acres of temporary impact;
- Alternative 3 – 86 acres (1.0%) of permanent loss and 20 acres of temporary impact;
- Alternative 4 – 80 acres (0.9%) of permanent loss and 14 acres of temporary impact;
- Alternative 5 – 102 acres (1.2%) of permanent loss and 24 acres of temporary impact;
- Alternative 6 – 118 acres (1.3%) of permanent loss and 27 acres of temporary impact; and
- Alternative 7 – 61 acres (0.7%) of permanent loss and 76 acres of temporary impact.

The overall loss of potential habitat for common species in the Reptile – Low Mobility guild in the Project area in general would be relatively small under Alternatives 2 through 7 in relation to the total acreage of vegetation communities and land covers on site. Alternative 6 would have the greatest direct permanent impacts to vegetation communities and land covers and Alternative 7 would have the smallest permanent direct impact.

Because of the relatively small amount of habitat loss for the Reptile – Low Mobility guild species, direct impacts resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Some individuals of these species could be harmed or lost during construction activities such as vegetation clearing and/or grading activities under Alternatives 2 through 7. Many of these species use rodent burrows that could be destroyed or crushed, directly killing or entombing individuals. Most species in this guild have weak, if any, burrowing abilities, and likely could not dig their way out of crushed burrows. Individuals that are flushed from vegetation or burrows during construction are also at a much greater risk of vehicle collisions, exposure, and predation if forced to the surface during the day. Generally, however, relatively few individuals are anticipated to be lost or harmed during construction activities during implementation of the RMDP and the SCP because of the limited amount of suitable habitat that would be affected.

Because of the small amount of habitat loss and the fact that these species utilize a variety of habitats and generally have widespread distributions, direct impacts resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to individuals of common species in the Reptile – Low Mobility guild and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 2,967 acres (33.8%) of permanent loss;
- Alternative 3 – 2,799 acres (31.9%) of permanent loss;
- Alternative 4 – 2,693 acres (30.7%) of permanent loss;
- Alternative 5 – 2,611 acres (29.7%) of permanent loss;
- Alternative 6 – 2,438 acres (27.8%) of permanent loss; and
- Alternative 7 – 2,201 acres (25.1%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial impacts to individuals and loss of their habitat in large portions of the Project area under each alternative. However, the snakes in this guild observed in the Project area are still commonly observed and widespread, and the lizards are very common and widespread. Species in this guild therefore will persist in the large,

undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Reptile – Low Mobility guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, individuals of these species could be directly killed or harmed during construction activities such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for injury or mortality to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas is much greater compared to implementation of the RMDP because much more suitable habitat for these species would be affected. However, because these species utilize a variety of habitats and are widespread throughout their ranges, the indirect impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect Reptile – Low Mobility guild species in areas adjacent to construction zones. These impacts include disruptions associated with increased human activity, noise, and nighttime illumination, the latter of which may disrupt the natural activity cycle of both diurnal and nocturnal species, making them more vulnerable to predation by nocturnal predators such as owls and coyotes.

Habitat fragmentation and isolation is a long-term secondary impact that may especially affect Reptile – Low Mobility guild species due to their relative lack of mobility and high risk of vehicle collisions. However, large intact areas of suitable habitat for this guild will be preserved in the High Country SMA, Salt Creek area, and River Corridor SMA and several existing culverts under SR-126 allow north–south movement between large habitat areas. Landscape-level habitat connectivity will be maintained under Alternatives 2 through 7 for species in this guild. Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7, however, would result in internal habitat fragmentation and potential isolation of some local populations of Reptile – Low Mobility guild species, making them more vulnerable to extirpation from small habitat patches. At a local level within the developed Project area, species in this guild are expected to occur in the constrained but intact natural drainages on site, such as Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Lion Canyon, and Castaic Creek, and to use these drainages for both resident and movement habitat. Species in this guild are unlikely to be significantly constrained in

their movement through these drainages where crossings are culverted (*e.g.*, under Alternative 2) rather than bridged (*e.g.*, under Alternative 7). Small reptiles readily move through small culverts (Ruediger and DiGiorgio 2007), especially those with natural, soft-bottom substrates. Therefore, the potential for movement of these species through the Project area is similar for Alternatives 2 through 7.

In addition, over the long term, the close proximity of urban development to suitable habitat for Reptile – Low Mobility guild species under Alternatives 2 through 7 could result in disruption of essential behavioral activities (*e.g.*, foraging and reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation and introduction of invasive species) and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased non-native species, such as Argentine ant; increased roadkill; and increased use of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used for refuge and a reduction in the prey base for the larger snake species. These potential impacts are expected to be similar for Alternatives 2 through 7.

Although both short-term construction-related and long-term secondary impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur, because the species in the Reptile – Low Mobility guild are still common and widespread, and will persist in the large open space area comprising the River Corridor SMA, High Country SMA, and Salt Creek area, these secondary impacts would be adverse but not significant Alternatives 2 through 7.

Mitigation Strategy and Summary

These species are commonly observed utilizing a variety of habitats and have widespread geographic distributions. All direct, indirect, and secondary impacts to the Reptile – Low Mobility guild species were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 3,430 acres of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system comprising upland habitats that support the common reptile species. It is expected that common reptile species in this guild will persist in these areas after build-out of the Project area. These mitigation measures also will reduce short-term secondary effects, such as increased noise, lighting, and increased human activity during construction, through biological monitoring and controls on lighting; and long-term effects, such as

habitat degradation; increased human activity; pet, stray and feral cats and dogs; lighting; pesticides and pollutants; and non-native species, such as Argentine ant. The key mitigation measures that will reduce impacts to Reptile – Low Mobility guild species are listed in **Table 4.5-37.**

Table 4.5-37
Applicable Mitigation Measures for Impacts to the Reptile – Low Mobility Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA, which includes terrestrial habitats) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to nocturnal reptiles during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation) BIO-85 (prevention of Argentine ant invasion) BIO-87 (quarterly monitoring and control measures for Argentine ants for up to 50 years)	Long-term effects of invasive plant and wildlife species.

Reptile and Amphibian – Semi-Aquatic Guild. This guild includes reptiles and amphibians that rely on both aquatic and terrestrial habitat for critical parts of their life cycles, Common Reptile and Amphibian – Semi-Aquatic guild species in the Project area include western toad, California treefrog, and Pacific treefrog, which is very common in the Santa Clara River and probably occurs throughout drainages in the Project area where there is adequate hydrology to support breeding. This guild also includes several special-status species, including arroyo toad, western spadefoot toad, California red-legged frog, two-striped garter snake, south coast garter snake, and southwestern pond turtle. These species are analyzed in detail in **Subsection 4.5.5.3**. The River corridor and tributaries that have intermittent flows provide the most suitable habitat for the species in this guild, including aquatic sites, such as ponds and potential breeding pools, depending on local site and general environmental conditions (*e.g.*, precipitation levels, river flow dynamics) as well as adjacent terrestrial habitats in the River floodplain that provide suitable foraging, nesting, and aestivation sites in close proximity to the aquatic sites. For the quantitative analysis of habitat impacts, the focus was on wetland and riparian habitats because these habitats are the main limiting factor for the distribution of the species in this guild on site. It was assumed that the large majority of habitat use by these species is confined to the River corridor floodplain and mesic and hydric tributaries, including terrestrial habitats within the floodplain, although most of these species are capable of making relatively far movements into adjacent upland habitats, including agricultural areas.

The general physiognomic and location classifications (CDFG 2003) that include wetland and riparian habitats are bog and marsh and riparian and bottomland habitat. There is a total of 1,189 acres of these habitats in the Project area. Impacts to potential upland terrestrial habitats, such as scrubs and grasslands, were not quantified because use of these areas is probably only sporadic.

Direct Impacts

Implementation of the RMDP and the SCP would result in injury and mortality of common semi-aquatic amphibian and reptile individuals and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 116 acres (9.8%) of permanent loss and 103 acres of temporary impact;
- Alternative 3 – 90 acres (7.6%) of permanent loss and 110 acres of temporary impact;
- Alternative 4 – 91 acres (7.6%) of permanent loss and 100 acres of temporary impact;

- Alternative 5 – 97 acres (8.2%) of permanent loss and 117 acres of temporary impact;
- Alternative 6 – 78 acres (6.6%) of permanent loss and 107 acres of temporary impact; and
- Alternative 7 – 16 acres (1.3%) of permanent loss and 100 acres of temporary impact.

Permanent and temporary impacts to bog and marsh and riparian and bottomland habitat for Reptile and Amphibian – Semi-Aquatic guild species are small under Alternatives 2 through 7. However, these impacts occur within the tributary drainages and along the banks of the Santa Clara River corridor. Although some of these impacts would occur in the tributary drainages, the Flood Technical Report (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions within the River corridor downstream of the Project area as a result of the proposed Project improvements under any of the alternatives. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support the Reptile and Amphibian – Semi-Aquatic guild species would be maintained, and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected.

Because of the relatively small amount of habitat loss for the Reptile and Amphibian – Semi-Aquatic guild species, and because the species in this guild are still common and widespread, direct impacts resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Injury or mortality to individuals in the Reptile and Amphibian – Semi-Aquatic guild could occur under Alternatives 2 through 7; in particular, from bank stabilization and bridge construction in the Santa Clara River corridor. All alternatives would have similar bank stabilization impacts, ranging from 25,561 linear feet under Alternative 7 to 29,844 linear feet under Alternative 2. Three bridges would be constructed across the Santa Clara River under Alternatives 2 and 5; two bridges would be constructed under Alternatives 3, 4, and 6; and one bridge would be constructed under Alternative 7.

Construction activities could result in impact to individuals in the Reptile and Amphibian – Semi-Aquatic guild in the disturbance zone as a result of direct contact of adults, subadults, juveniles, hatchlings, and eggs with construction equipment. Grading in upland habitat areas could directly kill or entomb aestivating or hibernating individuals.

In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as that caused by introduction of mud, silt, or chemical pollutants, may cause species in this guild to abandon the site and make them more vulnerable to impacts such as vehicle collisions, exposure, and predation.

Although there is a high potential for injury or mortality to individuals, these species are abundant and have widespread distributions. Impacts would not substantially reduce populations of species in this guild on site or rangewide. Therefore direct impacts to individuals would be adverse but not significant.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to common semi-aquatic amphibian and reptile individuals and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 109 acres (9.2%) of permanent loss;
- Alternative 3 – 85 acres (7.1%) of permanent loss;
- Alternative 4 – 67 acres (5.6%) of permanent loss;
- Alternative 5 – 64 acres (5.4%) of permanent loss;
- Alternative 6 – 42 acres (3.5%) of permanent loss; and
- Alternative 7 – 23 acres (1.9%) of permanent loss.

Similar to direct impacts, indirect impacts to habitat for the semi-aquatic reptiles and amphibians would be small, and they would be progressively smaller with each successive alternative. In addition, the species in this guild are still relatively common and widespread; species such as the Pacific treefrog and western toad occur wherever suitable habitat is present, even in urbanized settings. Species in this guild therefore will persist in the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, and Salt Creek area. The more urban-adapted species, such as Pacific treefrog and western toad, will also persist in Open Area and within the reconstructed stream channels where there is adequate hydrology to support breeding.

Indirect impacts to Reptile and Amphibian – Semi-Aquatic guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, individuals of these species could be directly killed or harmed during construction activities such as vegetation clearing and/or grading activities under

Alternatives 2 through 7. The potential for injury or mortality to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas would be similar to implementation of the RMDP because similar amounts of suitable habitat for these species would be affected. However, because these species are still common and widespread throughout their ranges and will persist on site after build-out, the indirect impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect Reptile and Amphibian – Semi-Aquatic guild species in areas adjacent to construction zones. These impacts include disruptions associated with increased human activity, noise, and nighttime illumination, the latter of which may disrupt the natural activity cycle of both diurnal and nocturnal species, making them more vulnerable to predation by nocturnal predators such as owls and coyotes. These potential impacts would be common to Alternatives 2 through 7.

The RMDP includes the construction of bridges and bank stabilization within the Santa Clara River corridor that could have long-term effects on hydrology and geomorphology in the Santa Clara River corridor. As noted above, however, there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements under any of the alternatives (PACE 2009). In addition, habitat within the reconstructed stream channels would provide suitable breeding habitat where there is adequate hydrology.

Although long-term secondary impacts of the RMDP on hydrology and geomorphology would not be substantial, the proposed Project could affect Reptile and Amphibian – Semi-Aquatic guild species downstream of work areas through short-term hydrologic or water quality alterations of the River during construction. In addition, RMDP-related work could disperse sediments and pollutants from construction on upland portions of the site into the Santa Clara River. Hydrologic and water-quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. These factors could result in harm to or mortality of Reptile and Amphibian – Semi-Aquatic guild species and/or the degradation of habitat quality. These impacts could occur under Alternatives 2 through 7, but generally would be relatively less for each alternative with reductions in the amount of improvements successively from Alternative 2 to Alternative 7. The construction of large-span bridges over the

Santa Clara River and associated piers and abutments will occur under Alternatives 2 through 7. Three bridges would be constructed under Alternatives 2 and 5; two bridges under Alternatives 3, 4, and 6; and one bridge under Alternative 7.

Potential long-term secondary impacts to Reptile and Amphibian – Semi-Aquatic guild species related to build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be greatest for Alternatives 2 and 3, due to construction of the VCC development; intermediate for Alternatives 4 through 6; and somewhat less for Alternative 7, because of the pullback from the edge of the Santa Clara River in Landmark Village and Homestead Village East compared to the other alternatives. Under Alternatives 2 through 7, the proximity of urban development to habitat for Reptile and Amphibian – Semi-Aquatic guild species could result in disruption of both diurnal and nocturnal activities; greater vulnerability to predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators (Crooks and Soulé 1999); collecting by children; degradation of habitat from increased human use (*e.g.*, trampling, trash, and off-road vehicles); altered fire regimes (probably too frequent fire); invasion by non-native plant (*e.g.*, giant reed, tamarisk, and pampas grass) and wildlife species (*e.g.*, bullfrogs, African clawed frogs, non-native fish, and crayfish); pesticides, and increased risk of vehicle collisions on roads adjacent to occupied areas.

Both short-term and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur. However, because the species in the Reptile and Amphibian – Semi-Aquatic guild are common and widespread and these species will persist in the undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Species in this guild are common and have widespread distributions. All direct, indirect, and secondary impacts to the Reptile and Amphibian – Semi-Aquatic guild species were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system comprising riparian and aquatic habitats as well as adjacent upland habitats, which support a high diversity of common species in this guild. It is expected that these species will persist in these areas after build-out of the Project

area. These mitigation measures also will reduce short-term secondary effects, such as increased noise, lighting, increased human activity, and impaired water quality and altered hydrology during construction, through biological monitoring and controls on lighting; and long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; pesticides and pollutants; and non-native species, such as African clawed frogs, bullfrogs, and crayfish. The key mitigation measures that will reduce impacts to Reptile and Amphibian – Semi-Aquatic guild species are listed in **Table 4.5-38.**

Table 4.5-38
Applicable Mitigation Measures for Impacts to the Reptile and Amphibian – Semi-Aquatic Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-55 (obtaining agency permits prior to development or disturbance within wetlands) SP-4.6-58 (conformance with NPDES and RWQCB permit provisions) BIO-44 (temporary crossing of Santa Clara River by bridges, culverts, or other feasible method and preparation of a Stream Crossing and Diversion Plan) BIO-45 (stream diversion bypass channels constructed in active wetted channel within the work zone) BIO-49 (prevention of mud and pollutants from entering streams and storm flows)	Short-term and long-term effects on habitat quality, including vegetation, water quality, and hydrology.
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.

Table 4.5-38
Applicable Mitigation Measures for Impacts to the Reptile and Amphibian – Semi-Aquatic Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to the nocturnal reptiles and amphibians during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning and other toxic effects.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation) BIO-80 (monitoring and control of invasive, non-native aquatic species for up to 50 years) BIO-85 (prevention of Argentine ant invasion) BIO-87 (quarterly monitoring and control measures for Argentine ants for up to 50 years)	Long-term effects of invasive plant and wildlife species.

Fish Guild. The Fish guild includes three non-special-status species: the California native prickly sculpin (likely introduced in the watershed); and largemouth bass, and western mosquitofish, which are non-native to California and introduced. Ventura County is the approximate southern extent of the prickly sculpin's range (which extends north to the Kenai Peninsula, Alaska); this species is adapted to a wide range of environments, including urbanized settings, although it may be absent in polluted aquatic environments (Moyle 2002). It may be abundant were it occurs and appears to co-exist well with non-native species such as largemouth bass (Moyle 2002). Four special-status fish species that have been documented in the Santa Clara River: unarmored threespine stickleback, arroyo chub, Santa Ana sucker, and southern steelhead (ENTRIX 2009; Stoeker and Kelly 2005). The special-status fish are analyzed in detail in **Subsection 4.5.5.3**.

Direct Impacts

Implementation of the RMDP, including construction of buried bank structures and bridges, could cause impacts to fish individuals during construction work within the River. The potential for impacts from installation of these structures is increased as the construction is planned for marginal areas of the riparian zone where fish may inhabit backwater areas.

Implementation of the proposed RMDP, specifically bank stabilization and construction of bridges, including placement of piers, across the River, under Alternatives 2 through 7 would result in physical changes to the Santa Clara River corridor that could affect suitable habitat for Fish guild species. Implementation of the RMDP would result in physical impacts that would affect fish species. There are no expected impacts to the Santa Clara River tributaries. No fish species have been found in the tributaries. In addition, only a few tributaries support perennial flow and none have surface water connectivity with the Santa Clara River, except in Middle and Potrero canyons, which have substantial blockages (bedrock headcuts or cascades) impassable to fish (ENTRIX 2009).

The only common native fish expected to be affected by the implementation of the RMDP is the prickly sculpin. Because this fish is very widespread (Ventura County to Alaska), is often abundant where it occurs (including in inland reservoirs), and appears to be very adaptive to different aquatic environments, including disturbed settings (Moyle 2002), no long-term adverse direct impacts to habitat from implementation of the RMDP are expected. Construction-related impacts to individuals, including injury or mortality, could occur as a result of stream diversions and any construction activities occurring in flowing water. However, because these impacts would be temporary and because this species is common and has a wide geographic range along the western coast of North America, these impacts would be adverse but not significant.

Impacts to non-native, introduced largemouth bass and mosquitofish during construction activities are not considered adverse effects, because removal of these fish from the Santa Clara River would benefit the aquatic system.

Indirect Impacts

Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be limited to upland areas. Therefore, impacts to fish habitat would not occur.

Secondary Impacts

The RMDP has the potential to affect fish species downstream of work areas through short-term hydrologic or water quality alterations of the River under Alternatives 2 through 7. In addition, although the tributary drainages within the RMDP site do not contain suitable fish habitat due to lack of perennial flows, these drainages could disperse pollutants into the Santa Clara River. Hydrologic and water-quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. These impacts could occur under Alternatives 2 through 7, but

generally would be relatively less for each alternative, with reductions in the amount of improvements successively from Alternative 2 to Alternative 7. The construction of large-span bridges over the Santa Clara River and associated piers and abutments will occur under Alternatives 2 through 7. Three bridges would be constructed under Alternatives 2 and 5; two bridges under Alternatives 3, 4, and 6; and one bridge under Alternative 7.

Potential long-term secondary impacts to fish species associated with build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas include increased urban runoff (including from roadways due to increased vehicle traffic); incidental litter; domestic pet impacts from recreational activities; and increased risk of erosion and sedimentation resulting from increased wildfires. These potential long-term secondary impacts would be similar for Alternatives 2 through 7. It should be noted that invasive species that may be predators of or competitors with many native fish, such as bullfrog, African clawed frog, crayfish, mosquitofish, green sunfish, and largemouth bass, do not appear to be a threat to the prickly sculpin. These threats to special-status fish, however, are discussed in detail in **Subsection 4.5.5.3**.

Because the prickly sculpin is common and widespread and adaptable to a variety of aquatic environments, short-term construction-related and long-term secondary impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

The only common California native fish is the prickly sculpin, which is widespread and common. All direct, indirect, and secondary impacts to the Fish guild (*i.e.*, prickly sculpin) were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA which provides aquatic habitat for the Fish guild. It is expected that Fish guild species will persist in the River Corridor SMA after build-out of the Project area. These mitigation measures also will reduce impacts to individuals during construction and short-term secondary effects, such as impaired water quality and altered hydrology during biological monitoring, compliance with wetland permits and authorizations, Best Management Practices (BMPs); and long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides and pollutants. The key mitigation measures that will reduce impacts to the Fish guild are listed in **Table 4.5-39.**

Table 4.5-39
Applicable Mitigation Measures for Impacts to the Fish Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-55 (obtaining agency permits prior to development or disturbance within wetlands) SP-4.6-58 (conformance with NPDES and RWQCB permit provisions) BIO-44 (temporary crossing of Santa Clara River by bridges, culverts, or other feasible method and preparation of a Stream Crossing and Diversion Plan) BIO-45 (stream diversion bypass channels constructed in active wetted channel within the work zone) BIO-46 (biological monitoring during any stream diversion or culvert installation activity and inspection for stranded fish) BIO-47 **(**slow moving water habitats provided upstream and downstream of any river crossing or bridge construction area to provide refuge for fishes during construction) BIO-48 **(**bridges, culverts, or other structures will not impair the movement of fish and aquatic life) BIO-49 (prevention of mud and pollutants from entering streams and storm flows)	Short-term and long-term effects on individuals and habitat quality, including vegetation, water quality, and hydrology.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) BIO-1 through BIO-16 (wetlands mitigation plan and riparian restoration activities on the Project site)	Long-term secondary effects of urban runoff and pollutants, non-native plant species, and increased human and pet activity.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of fish.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning and other toxic effects.

Bird – Raptor. This guild includes raptors known to occur on site or in the Project vicinity and nesting and/or foraging species. Common raptors that occur in the Project area include red-tailed hawk, red-shouldered hawk, American kestrel, barn owl, and great horned owl. Special-status species in this guild are American peregrine falcon, California condor, Cooper's hawk, ferruginous hawk, golden eagle, loggerhead shrike (the shrike is included in this guild because of its raptor-like foraging behavior and because it is

sensitive to several of the secondary effects on raptors discussed below), long-eared owl, merlin, northern harrier, prairie falcon, sharp-shinned hawk, short-eared owl, turkey vulture, western burrowing owl, and white-tailed kite. These special-status species are analyzed in detail in **Subsection 4.5.5.3**.

Most common raptors are breeding residents in the Project area and would therefore be affected by the loss of both nesting and foraging habitat. As a whole, Bird – Raptor guild species may use virtually all of the vegetation communities and land covers present in the Project area for breeding or foraging, or both. All vegetation communities and land covers in the Project area, therefore, are considered suitable habitat for the Bird – Raptor guild. A total of 14,288 acres of suitable habitat for species in this guild is present in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in both impacts to raptor individuals and permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 394 acres (2.8%) of permanent loss and 201 acres of temporary impact;
- Alternative 3 – 197 acres (1.4%) of permanent loss and 250 acres of temporary impact;
- Alternative 4 – 335 acres (2.3%) of permanent loss and 247 acres of temporary impact;
- Alternative 5 – 404 acres (2.8%) of permanent loss and 244 acres of temporary impact;
- Alternative 6 – 383 acres (2.7%) of permanent loss and 249 acres of temporary impact; and
- Alternative 7 – 172 acres (1.2%) of permanent loss and 572 acres of temporary impact.

These raptors are common and have widespread distributions throughout California. The overall loss of potential habitat or these species in the Project area in general would be small under Alternatives 2 through 7 in relation to the total acreage of vegetation communities and land covers available on site and in the Project vicinity. Alternative 5 would have the greatest direct permanent impacts to vegetation communities and land covers, and Alternative 7 would have the smallest permanent direct impact. Direct impacts resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Direct injury or mortality of adult birds is unlikely because they are highly mobile. However, construction activities could result in the loss of nests, eggs, nestlings, and fledglings from vegetation clearing and/or grading activities due to implementation of the RMDP under Alternatives 2 through 7 if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game Code sections 3503 and 3503.4 (birds of prey) (significance criterion 1) and thus would be significant, absent mitigation.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to common raptor individuals and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 5,200 acres (36.4%) of permanent loss;
- Alternative 3 – 4,941 acres (34.6%) of permanent loss;
- Alternative 4 – 4,736 acres (33.1%) of permanent loss;
- Alternative 5 – 4,629 acres (32.4%) of permanent loss;
- Alternative 6 – 4,311 acres (30.2%) of permanent loss; and
- Alternative 7 – 3,728 acres (26.1%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial impacts to raptor individuals and loss of their habitat in large portions of the Project area under each alternative. However, these raptors species are relatively common and widespread and therefore will persist in the undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Bird – Raptor guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, nests, eggs, nestlings, and fledglings of species in this guild could be destroyed, damaged, killed, or injured by construction activities such as vegetation clearing and/or grading activities due to build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7, if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game

Code sections 3503 and 3503.4 (birds of prey) (significance criterion 1), and thus would be significant, absent mitigation.

Secondary Impacts

Short-term construction-related impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would potentially affect raptors in areas adjacent to construction zones. These impacts include construction-related noise, ground vibration, and general human activity that could disrupt breeding behavior and reduce reproductive success.

With regard to potential long-term secondary impacts, as a group, raptors are vulnerable to a generally consistent set of secondary impacts: pesticides (including rodenticides, which reduce prey abundance or directly poison raptors through consumption of contaminated prey, and pesticides such as DDT that cause egg-shell thinning); other contaminants (*e.g.*, lead, microtrash); collisions with vehicles, aircraft, buildings, powerlines (entanglement and electrocution), and other structures, such as towers; human and pet disturbance of nest sites; noise; lighting; disease; mesopredators; and clean farming techniques that remove vegetation and prey. Although each of these potential impacts is likely to affect each of the raptor species somewhat differently, all have been implicated as contributors to the decline of this group of species. Because these impacts are generally associated with urban and agricultural development, including increased vehicle traffic and utility infrastructure (transmission and distribution lines, cell towers), they could occur under Alternatives 2 through 7 at similar levels.

Both short-term construction-related and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur. However, because Bird – Raptor species are common and widespread, and because they will persist in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Impacts to individuals during the nesting season include damage, injury or mortality of nests, eggs, nestlings, and fledglings, would be significant, absent mitigation because such impacts would violate the MBTA and California Fish and Game codes (significance criterion 1). These impacts will be avoided through pre-construction surveys within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site. The survey shall be conducted to determine if active nests of native bird species are present in the disturbance zone or within 500 feet. The surveys shall continue on a

weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed within 500 feet of the nest, or until the nest is vacated or the young have fledged. The buffer may be modified in consultation with CDFG.

The raptors in this guild are common and have widespread geographic distributions. These species are routinely observed in the River Corridor SMA, High Country SMA, Salt Creek area, and adjacent undeveloped areas. The direct and indirect loss of habitat and direct and indirect secondary impacts to the Bird – Raptor guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system. It is expected that the common species in this guild will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures. Raptor-specific mitigation measures to reduce collisions and entanglements with and electrocutions from contact with utilities (*i.e.*, utility towers, poles, lines, etc.) will be implemented. The key mitigation measures that will reduce impacts to Bird – Raptor guild species are listed in **Table 4.5-40.**

Table 4.5-40
Applicable Mitigation Measures for Impacts to the Bird – Raptor Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
BIO-56 (pre-construction surveys for nesting raptors and 500-foot construction setbacks for active nests)	Construction-related impacts to nests, eggs, nestlings, and fledglings.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.

Table 4.5-40
Applicable Mitigation Measures for Impacts to the Bird – Raptor Guild

Mitigation Measure(s)	Issue(s) Mitigating
River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to raptor behavior and roost/nest sites during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning and other toxic effects.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Long-term effects of invasive plant and wildlife species.
BIO-81 (restrictions on installation of towers/poles in the High Country SMA and Salt Creek area) BIO-82 (Anti-perching devices and debris control guidelines for towers/poles in the High Country SMA and Salt Creek area)	Impacts to raptors such as collisions, entanglement, and electrocution.

Bird – Riparian. This guild includes non-raptor birds whose habitat is primarily riparian and wetland habitats. Many common species are in the Bird – Riparian guild, including house wren, Swainson's thrush, common yellowthroat, and various herons and egrets, woodpeckers, flycatchers, and warblers. This guild includes are large number of special-status species, including Nuttall's woodpecker, summer tanager, yellow warbler, yellow-breasted chat, yellow-headed blackbird, black-crowned night heron, least Bell's vireo, willow flycatcher/southwestern willow flycatcher, tricolored blackbird, vermilion flycatcher, and western yellow-billed cuckoo. These special-status species are analyzed in detail in **Subsection 4.5.5.3**. The large number of species that occurs in riparian communities reflects the high wildlife diversity of riparian and wetland habitats (excluding open waters such as lakes, reservoirs, and ponds). The life histories of the Bird – Riparian guild species are diverse, most are highly mobile, and many of the

species are migratory summer residents that nest on site and winter elsewhere (*e.g.*, neo-tropical migrants). The general physiognomic and location classifications (CDFG 2003) that include wetland and riparian habitats are bog and marsh and riparian and bottomland habitat. There is a total of 1,189 acres of these habitats in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in injury and mortality to common Bird – Riparian guild individuals and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 116 acres (9.8%) of permanent loss and 103 acres of temporary impact;
- Alternative 3 – 90 acres (7.6%) of permanent loss and 110 acres of temporary impact;
- Alternative 4 – 91 acres (7.6%) of permanent loss and 100 acres of temporary impact;
- Alternative 5 – 97 acres (8.2%) of permanent loss and 117 acres of temporary impact;
- Alternative 6 – 78 acres (6.6%) of permanent loss and 107 acres of temporary impact; and
- Alternative 7 – 16 acres (1.3%) of permanent loss and 100 acres of temporary impact.

Permanent and temporary impacts would occur in the Santa Clara River corridor and tributaries to the River. Alternative 2 would have the greatest amount of permanent impact, with 9.8% of the habitat impacted. Alternative 7 would have the smallest impact, at 1.3%. Alternatives 3 through 6 would have intermediate amounts of impacts.

Because species in the Bird – Riparian guild are common, have a widespread distribution, and large amounts of riparian habitat will remain undisturbed, these species will continue to use the Project area. In addition, there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions within and downstream of the Project area as a result of the proposed Project improvements under any of the alternatives (PACE 2009). Therefore, riparian communities used by species in this guild would not be substantially altered within the River corridor on site or downstream. Direct impacts resulting from implementation of the RMDP and the SCP therefore would be adverse but not significant under Alternatives 2 through 7.

Nests, eggs, nestlings, and fledglings of species in this guild could be damaged, injured, or killed by construction activities such as vegetation clearing and/or grading activities due to implementation of the RMDP under Alternatives 2 through 7, if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and would be significant, absent mitigation.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to common Bird – Riparian guild individuals and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 109 acres (9.2%) of permanent loss;
- Alternative 3 – 85 acres (7.1%) of permanent loss;
- Alternative 4 – 67 acres (5.6%) of permanent loss;
- Alternative 5 – 64 acres (5.4%) of permanent loss;
- Alternative 6 – 42 acres (3.5%) of permanent loss; and
- Alternative 7 – 23 acres (1.9%) of permanent loss.

Similar to direct impacts, indirect impacts to habitat for Bird – Riparian guild species would be progressively smaller with each successive alternative. In addition, the species in this guild are still relatively common and widespread and there will be substantial undisturbed riparian habitat available. Species in this guild therefore will persist in the riparian communities preserved within the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, and Salt Creek area.

Indirect impacts to common Bird – Riparian guild species resulting from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, nests, eggs, nestlings, and fledglings could be damaged, killed, or injured during construction activities such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for impacts to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas would be similar to implementation of the RMDP, because similar amounts of suitable habitat for these species would be affected. These impacts would violate the MBTA and Fish and Game

Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Secondary Impacts

Short-term, construction-related impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas could affect Bird – Riparian guild species in areas adjacent to construction zones under Alternatives 2 through 7. These impacts include construction-related noise and ground vibration, fugitive dust, nighttime illumination, and reduced water quality, resulting in potential harm to individual birds, young, and/or eggs. In particular, construction-related noise, vibration, and nighttime illumination could adversely affect nesting and breeding behavior as well as other activities, resulting in decreased nesting success. These impacts could occur under Alternatives 2 through 7, but generally would be relatively less for each alternative with reductions in the amount of improvements successively from Alternative 2 to Alternative 7. The construction of large-span bridges over the Santa Clara River and associated piers and abutments will occur under Alternatives 2 through 7. Three bridges would be constructed under Alternatives 2 and 5; two bridges under Alternatives 3, 4, and 6; and one bridge under Alternative 7.

Long-term secondary impacts to Bird – Riparian guild species associated with use of RMDP facilities also could occur. Chronic traffic noise and lighting associated with roads and bridges in close proximity to potential breeding habitat in the River corridor could have adverse effects on the establishment of breeding territories and reproductive success.

Potential long-term secondary impacts to Bird – Riparian guild species related to build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be greatest for Alternatives 2 and 3, due to construction of the VCC development (Alternatives 2 and 3 only); intermediate for Alternatives 4 through 6; and somewhat less for Alternative 7, because of the pullback from the edge of the Santa Clara River in Landmark Village and Homestead Village East compared to the other alternatives. Under Alternatives 2 through 7, the proximity of urban development to habitat for Bird – Riparian guild species would result in potential long-term secondary impacts, including noise, nighttime illumination, hydrologic and geomorphic alterations, reduced water quality, invasion by non-native plant species such as giant reed and tamarisk, increased trash, nest parasitism by brown-headed cowbirds, harassment by humans, harassment and predation by pet, stray, and feral cats and dogs, and increased mesopredators (*e.g.*, skunks, raccoons, and opossums).

Both short-term construction-related and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2

and 3 only), and Entrada planning areas are expected to occur. However, because Bird – Riparian species are common and widespread, and because they will persist in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Impacts to individuals during the nesting season, including damage, injury or mortality of nests, eggs, nestlings, and fledglings would be significant, absent mitigation, because such impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1). These impacts will be avoided through pre-construction surveys within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site. The survey shall be conducted to determine if active nests of native bird species are present in the disturbance zone or within 300 feet. The surveys shall continue on a weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed at the discretion of the biologist, until the nest is vacated.

The direct and indirect loss of habitat and direct and indirect secondary impacts to the Bird – Riparian guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system that includes about 820 acres of suitable riparian communities, of which about 733 are in the River Corridor SMA. In addition, habitat within the reconstructed stream channels would provide suitable nesting and breeding habitat where there is adequate hydrology to support riparian vegetation. It is expected that the common species in this guild will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; cowbird parasitism; and pesticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Bird – Riparian guild species are listed in **Table 4.5-41.**

Table 4.5-41
Applicable Mitigation Measures for Impacts to the Bird – Riparian Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury of mortality to individuals and impacts to their habitat.
BIO-56 (pre-construction surveys for nesting native birds and construction setbacks for active nests)	Construction-related impacts to nests, eggs, nestlings, and fledglings.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to the nocturnal reptiles and amphibians during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning and other toxic effects.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Long-term effects of invasive plant and wildlife species.
BIO-78 (cowbird monitoring and trapping program)	Control of cowbird nest parasitism of native species.

Bird – Upland Grassland. This guild includes non-raptor birds whose habitat use on site is primarily grassland. There are relatively few birds that are almost exclusively

grassland species, but two common birds in this guild occurring on site are western meadowlark and savannah sparrow. The guild also includes only two special-status species: California horned lark, which has been observed on site but is not documented as nesting, and grasshopper sparrow, which has not been observed on site but has moderate potential to occur. These special-status species are analyzed in detail in **Subsection 4.5.5.3**. California annual grassland is the grassland community used by this guild, and it totals 2,300 acres in the Project area.

Direct Impacts

Implementation of the RMDP would result in injury or mortality to individuals in this guild and permanent and the temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 24 acres (1.0%) of permanent loss and 10 acres of temporary impact;
- Alternative 3 – 32 acres (1.4%) of permanent loss and 14 acres of temporary impact;
- Alternative 4 – 24 acres (1.0%) of permanent loss and 10 acres of temporary impact;
- Alternative 5 – 42 acres (1.8%) of permanent loss and 16 acres of temporary impact;
- Alternative 6 – 66 acres (2.9%) of permanent loss and 18 acres of temporary impact; and
- Alternative 7 – 19 acres (0.8%) of permanent loss and 55 acres of temporary impact.

The permanent loss of potential habitat for common species in the Bird – Upland Grassland guild in the Project area generally would be similar under Alternatives 2 through 7 in relation to the total acreage of California annual grassland on site, ranging from 0.8% impact under Alternative 7 to 2.9% impact under Alternative 6. Temporary impacts would be similar for Alternatives 2 through 6, and somewhat higher for Alternative 7.

The western meadowlark and savannah sparrow are commonly observed in grassland and have widespread geographic distributions. The loss of habitat for the Bird – Upland Grassland guild species resulting from implementation of the RMDP and the SCP would not substantially affect the abundance and distribution of these species on site and therefore would be adverse but not significant under Alternatives 2 through 7.

Nests, eggs, nestlings, and fledglings of species in this guild could be damaged, killed, or injured by construction activities, such as vegetation clearing and/or grading activities due to implementation of the RMDP under Alternatives 2 through 7, if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in both impacts to common species in the Bird – Upland Grassland guild and loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 1,043 acres (45.3%) of permanent loss;
- Alternative 3 – 966 acres (42.0%) of permanent loss;
- Alternative 4 – 911 acres (39.6%) of permanent loss;
- Alternative 5 – 880 acres (38.3%) of permanent loss;
- Alternative 6 – 846 acres (36.8%) of permanent loss; and
- Alternative 7 – 722 acres (31.4%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial loss of their habitat in large portions of the Project area under each alternative. However, western meadowlark and savannah sparrow are still commonly observed in grassland and have widespread geographic distributions and therefore would persist in the large, undeveloped portions of the Project area, such as the High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Bird – Upland Grassland guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, nests, eggs, nestlings, and fledglings could be damaged, killed, or injured during construction activities, such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for impacts to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas is greater compared to implementation of the RMDP because much more suitable habitat for these species

would be affected. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect Bird – Upland Grassland guild species in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination that could inhibit the species from using suitable habitat for foraging or nesting, and thus affect the reproductive success of species that nest on site. These potential impacts would be similar for Alternatives 2 through 7.

Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would result in some level of habitat fragmentation, making Bird – Upland Grassland guild species more vulnerable to edge effects and local extirpation from smaller habitat patches. The savannah sparrow is a migrant, and thus is a highly mobile species that can move through modified landscapes, but small habitat patches would make the species more vulnerable to edge effects associated with build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7. Meadowlarks are not migratory, but may form large winter flocks and are highly mobile. Potential edge effects include disturbance associated with human activity that could result in a decrease in nesting and foraging success, including abandonment of nests and greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators; increased vulnerability to predation by nocturnal predators (such as owls and coyotes) due to nighttime illumination; pesticides; mowing; and noise.

Both short-term construction-related and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur. However, because Bird – Upland Grassland species are common and widespread, and because they will persist in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Impacts to individuals during the nesting season, including damage, killing, and injury of nests, eggs, nestlings, and fledglings, would be significant, absent mitigation because such impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1). These impacts will be avoided through pre-construction surveys within 30 days of ground-disturbing activities associated with construction or

grading occurring during the nesting/breeding season of native bird species potentially nesting on the site. The survey shall be conducted to determine if active nests of native bird species are present in the disturbance zone or within 300 feet. The surveys shall continue on a weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed at the discretion of the biologist, until the nest is vacated.

The direct and indirect loss of habitat and direct and indirect secondary impacts to the Bird – Upland Grassland guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system that includes 653 acres of California annual grassland. It is expected that the common species in this guild will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Bird – Upland Grassland guild species are listed in **Table 4.5-42.**

Table 4.5-42
Applicable Mitigation Measures for Impacts to the Bird – Upland Grassland Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
BIO-56 (pre-construction surveys for nesting native birds and construction setbacks for active nests)	Construction-related impacts to nests, eggs, nestlings, and fledglings.
SP-4.6-27 (removal of grazing in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the High Country SMA) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native and plant and wildlife species, and increased human and pet activity.

Table 4.5-42
Applicable Mitigation Measures for Impacts to the Bird – Upland Grassland Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in secondary poisoning or loss or prey.

Bird – Upland Scrub and Chaparral. This guild includes birds whose occurrence on site is primarily in upland scrub and/or chaparral habitats. Common birds in this guild include western scrub-jay, bushtit, California quail, California thrasher, California towhee, spotted towhee, and wrentit. This guild also includes several special-status species that have been documented on site or that have potential to occur in the Project area, including Allen's hummingbird, Costa's hummingbird, rufous hummingbird, Bell's sage sparrow, black-chinned sparrow, southern California rufous-crowned sparrow, and California gnatcatcher. These special-status species are analyzed in detail in **Subsection 4.5.5.3**. Although this guild includes both migrants and permanent residents and some of the species may use non-scrub or chaparral habitat during dispersal or migration, or as "secondary" habitats (*e.g.*, habitats that may be used opportunistically, but are not essential to meet their life history needs), they all breed in scrub and/or chaparral and in most cases would not occur on site in the absence of these habitats. The general physiognomic and location classifications (CDFG 2003) for these habitats are scrub and chaparral. There is a total of 6,482 acres of suitable habitat in the Project area.

Direct Impacts

Implementation of the RMDP would result in injury or mortality to individuals in this guild and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 57 acres (0.9%) of permanent loss and 3.8 acres of temporary impact;
- Alternative 3 – 54 acres (0.8%) of permanent loss and 6.3 acres of temporary impact;
- Alternative 4 – 56 acres (0.9%) of permanent loss and 3.5 acres of temporary impact;

- Alternative 5 – 60 acres (0.9%) of permanent loss and 7.8 acres of temporary impact;
- Alternative 6 – 52 acres (0.8%) of permanent loss and 9.4 acres of temporary impact; and
- Alternative 7 – 42 acres (0.6%) of permanent loss and 21 acres of temporary impact.

The permanent loss of potential habitat associated with RMDP facilities for common species in the Bird – Upland Scrub and Chaparral guild in the Project area would be similar under Alternatives 2 through 7 in relation to the total acreage of scrub and chaparral on site, ranging from 0.6% for Alternative 7 to 0.9% for Alternative 5, which is only marginally higher than Alternatives 2, 3, 4, and 6. Temporary impacts to habitat would be similar for Alternatives 2 through 6 and somewhat higher for Alternative 7.

Species in this guild are commonly observed in scrub and chaparral habitat and have widespread geographic distributions. The loss of habitat for the Bird – Upland Scrub and Chaparral guild species resulting from implementation of the RMDP and the SCP would not substantially affect the abundance and distribution of these species on site and therefore would be adverse but not significant under Alternatives 2 through 7.

Nests, eggs, nestlings, and fledglings of species in this guild could be damaged, killed, or injured by construction activities, such as vegetation clearing and/or grading activities due to implementation of the RMDP under Alternatives 2 through 7, if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to individuals of common species in the Bird – Upland Scrub and Chaparral guild and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 1,924 acres (29.7%) of permanent loss;
- Alternative 3 – 1,833 acres (28.3%) of permanent loss;
- Alternative 4 – 1,782 acres (27.5%) of permanent loss;
- Alternative 5 – 1,731 acres (26.7%) of permanent loss;

- Alternative 6 – 1,592 acres (24.6%) of permanent loss; and
- Alternative 7 – 1,479 acres (22.8%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial loss of their habitat in large portions of the Project area under each alternative. However, the birds in this guild observed in the Project area are still common and have widespread geographic distributions and therefore would persist in the large, undeveloped portions of the Project area, such as the River Corridor SMA (which includes about 60 acres of scrub and chaparral), High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Bird – Upland Scrub and Chaparral guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, nests, eggs, nestlings, and fledglings could be damaged, killed, or injured during construction activities such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for impacts to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas is greater compared to implementation of the RMDP because much more suitable habitat for these species would be affected. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP implementation and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect Bird – Upland Scrub and Chaparral guild species in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination that could inhibit the species from using suitable habitat for foraging or nesting, and thus affect the reproductive success of species that nest on site. These potential impacts would be similar for Alternatives 2 through 7.

Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would result in habitat fragmentation and potential isolation of some local populations of Bird – Upland Scrub and Chaparral guild species, making them more vulnerable to local extirpation. It is difficult to generalize habitat fragmentation and isolation effects to all the species in this guild because of their different life histories and movement capabilities (*e.g.*, migrant *vs.* resident species), but some species in the guild could be extirpated from small habitat patches (*e.g.*, Bolger, Scott *et al.* 1997). However, these common species are expected to be less affected by

habitat fragmentation than some special-status species such as Bell's sage sparrow (Bolger, Scott *et al.* 1997), because of their apparent persistence in already fragmented habitats in southern California.

Other long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 include disturbance associated with human activity that could result in a decrease in nesting and foraging success, including abandonment of nests and greater vulnerability to predation by pet, stray and feral cats and dogs and other mesopredators; increased vulnerability to predation by other nocturnal predators (such as owls and coyotes) due to nighttime illumination; brood parasitism by cowbirds; noise; and frequent wildfires that may degrade scrub and chaparral habitat over the long term. These potential effects would be common to Alternatives 2 through 7.

Both short-term construction-related and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur. However, because these species are common and widespread, and because they will persist in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Impacts to individuals during the nesting season, including damage, killing, and injuring of nests, eggs, nestlings, and fledglings would be significant, absent mitigation because such impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1). These impacts will be avoided through pre-construction surveys within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site. The survey shall be conducted to determine if active nests of native bird species are present in the disturbance zone or within 300 feet. The surveys shall continue on a weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed at the discretion of the biologist, until the nest is vacated.

The direct and indirect loss of habitat and direct and indirect secondary impacts to the Bird – Upland Scrub and Chaparral guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system comprising upland habitats that support a high diversity of common scrub

and chaparral species. It is expected that common species in this guild will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; cowbird parasitism; and pesticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Bird – Upland Scrub and Chaparral guild species are listed in **Table 4.5-43.**

Table 4.5-43
Applicable Mitigation Measures for Impacts to the Bird – Upland Scrub and Chaparral Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
BIO-56 (pre-construction surveys for nesting native birds and construction setbacks for active nests)	Construction-related impacts to nests, eggs, nestlings, and fledglings.
SP-4.6-27 (removal of grazing in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-20 (preservation of approximately 1,900 acres of coastal scrub on site) BIO-21 (restoration/enhancement of coastal scrub in High Country SMA, Salt Creek area, and River Corridor SMA) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native and plant and wildlife species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in secondary poisoning or loss or prey.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Long-term effects of invasive plant and wildlife species.

Table 4.5-43
Applicable Mitigation Measures for Impacts to the Bird – Upland Scrub and Chaparral Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-78 (cowbird monitoring and trapping program)	Control of cowbird nest parasitism of native species.

Bird – Upland Woodland. This guild includes non-raptor birds whose habitat use on site is upland woodland, primarily oak woodlands. Common birds in this guild include acorn woodpecker, lark sparrow, ash-throated flycatcher, and western bluebird. This guild includes several special-status species: hermit warbler, chipping sparrow, Lawrence's goldfinch, and oak titmouse (**Table 4.5-35**). These special-status species are analyzed in detail in **Subsection 4.5.5.3**. The general physiognomic and location classification (CDFG 2003) for upland woodland habitats is broad leafed upland tree dominated. There is a total of 1,468 acres of upland woodland habitat in the Project area.

Direct Impacts

Implementation of the RMDP would result in injury or mortality to individuals in this guild and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 9.3 acres (0.6%) of permanent loss and 1.4 acres of temporary impact;
- Alternative 3 – 9.5 acres (0.6%) of permanent loss and 1.4 acres of temporary impact;
- Alternative 4 – 8.9 acres (0.6%) of permanent loss and 1.4 acres of temporary impact;
- Alternative 5 – 13 acres (0.9%) of permanent loss and 1.4 acres of temporary impact;
- Alternative 6 – 17 acres (1.1%) of permanent loss and 1.4 acres of temporary impact; and
- Alternative 7 – 5.8 acres (0.4%) of permanent loss and 13.2 acres of temporary impact.

The permanent loss of potential habitat associated with RMDP facilities for common species in the Bird – Upland Woodland guild in the Project area in general would similar

under Alternatives 2 through 7 in relation to the total acreage of woodland communities on site, ranging from 0.4% for Alternative 7 to 1.1% for Alternative 6. Temporary impacts to habitat would be identical for Alternatives 2 through 6, and somewhat higher for Alternative 7.

Some of the species in this guild, such as the acorn woodpecker, are abundant and commonly observed in woodland habitat. Other species, such as western bluebird, lark sparrow and ash-throated flycatcher are not as abundant, but are still considered to be common or fairly common and have widespread geographic distributions. The small amount of habitat loss for the Bird – Upland Woodland guild species resulting from implementation of the RMDP and the SCP would not substantially affect the abundance and distribution of these species on site and therefore would be adverse but not significant under Alternatives 2 through 7.

Nests, eggs, nestlings, and fledglings of species in this guild could be damaged, killed, or injured by construction activities such as vegetation clearing and/or grading activities due to implementation of the RMDP under Alternatives 2 through 7 if such activities occurred during the nesting season. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to individuals in the Bird – Upland Woodland guild and the loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 85 acres (5.7%) of permanent loss;
- Alternative 3 – 66 acres (4.5%) of permanent loss;
- Alternative 4 – 65 acres (4.4%) of permanent loss;
- Alternative 5 – 66 acres (4.5%) of permanent loss;
- Alternative 6 – 45 acres (3.1%) of permanent loss; and
- Alternative 7 – 47 acres (3.2%) of permanent loss.

The permanent loss of habitat would generally be progressively smaller under successive alternatives (except for Alternative 5) and would range from 5.7% for Alternative 2 to 3.2% for Alternative 7.

The birds in this guild are still common or relatively common and have widespread geographic distributions. These species would persist in woodland habitat in the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area. Indirect impacts to Bird – Upland Woodland guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas therefore would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, nests, eggs, nestlings, and fledglings could be damaged, killed, or injured during construction activities, such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for impacts to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas is greater compared to implementation of the RMDP because much more suitable habitat for these species would be affected. These impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1), and thus would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect Bird – Upland Woodland guild species in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination that could inhibit the species from using suitable habitat for foraging or nesting, and thus affect the reproductive success of species that nest on site. These potential impacts would be similar for Alternatives 2 through 7.

Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would result in some level of habitat fragmentation, making Bird – Upland Woodland guild species more vulnerable to edge effects and local extirpation. Species in this guild are highly mobile and probably can move between relatively isolated woodland patches, but smaller patches in closer proximity to urban development would make them more vulnerable to edge effects associated with build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7. These potential edge effects include disturbance associated with human activity that could result in a decrease in nesting and foraging success, including abandonment of nests and greater vulnerability to predation by pet, stray, and feral cats (dogs are unlikely to prey on these species because their nests tend to be in trees and thickets out of reach of dogs) and other mesopredators; increased vulnerability to predation by nocturnal predators (such as owls) due to nighttime illumination; brood parasitism by cowbirds; noise; and competition for cavity nest sites (*e.g.*, acorn woodpecker) by European starlings.

Both short-term construction-related and long-term secondary impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur. However, because Bird – Upland Woodland species are common and widespread, and because they will persist in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

Impacts to individuals during the nesting season, including damage, destruction, killing, and injuring of nests, eggs, nestlings, and fledglings, would be significant, absent mitigation because such impacts would violate the MBTA and Fish and Game Code section 3503 (significance criterion 1). These impacts will be avoided through pre-construction surveys within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site. The survey shall be conducted to determine if active nests of native bird species are present in the disturbance zone or within 300 feet. The surveys shall continue on a weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed at the discretion of the biologist, until the nest is vacated.

The direct and indirect loss of habitat and direct and indirect secondary impacts to the Bird – Upland Woodland guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system that includes about 1,293 acres of suitable woodland habitats. It is expected that the common species in this guild will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; cowbird parasitism; and pesticides will also be mitigated through a variety of measures.. The key mitigation measures that will reduce impacts to Bird – Upland Woodland guild species are listed in **Table 4.5-44.**

Table 4.5-44
Applicable Mitigation Measures for Impacts to the Bird – Upland Woodland Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
BIO-56 (pre-construction surveys for nesting native birds and construction setbacks for active nests)	Construction-related impacts to nests, eggs, nestlings, and fledglings.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to the nocturnal reptiles and amphibians during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of pesticides that may result in poisoning and other toxic effects.
BIO-72 (review of plant palettes and inspection of container plants for use within 100 feet of native vegetation for pests and disease; restrictions on invasive plants and irrigation)	Long-term effects of invasive plant and wildlife species.
BIO-78 (cowbird monitoring and trapping program)	Control of cowbird nest parasitism of native species.

Bats. The Bat guild includes several common and special-status bat species that have been documented in the Project area through focused bat surveys (Impact Sciences 2005, Johnson 2006). The potential for other species that were not documented through focused

surveys was based on their rangewide distribution and the availability of habitat on site. Common bat species that were detected or have potential to occur in the Project area include Mexican free-tailed bat, western pipistrelle, big brown bat, California myotis, and little brown bat. The special-status species that were detected or have potential to occur in the Project area include fringed myotis, long-legged myotis, western small-footed myotis, Yuma myotis, pallid bat, pocketed free-tailed bat, Townsend's big-eared bat, western mastiff bat, and western red bat. These special-status species are analyzed in detail in **Subsection 4.5.5.3**.

Most of the common and special-status bat species detected or potentially occurring are foraging habitat generalists. They forage over almost any habitat where prey species (primarily moths and other flying insects) occur. However, many bats tend to concentrate foraging activities in riparian and wetland habitats where insect abundance is high. Most of the species also use a variety of natural features and manmade structures for day roosts (including colonial maternal sites) and night roosts, including natural caves and tunnels, crevices, rocky outcrops, cliff faces, mines, buildings, tree cavities, and bark crevices, to a limited extent. One pallid bat maternity nest site was located in a shed during the bat surveys conducted in middle Potrero Canyon (Johnson 2006) (see **Subsection 4.5.5.3**). Day roosts were also observed by Johnson (2006) at two bridges over the Santa Clara River during a daytime survey. At least three species were determined to be roosting underneath the I-5 Bridge in a crevice designed for bat habitat, based on the guano types present: Mexican free-tailed bats, big brown bats and/or pallid bats, and myotis bats (species unknown). Bats were also observed night roosting under the I-5 Bridge deck at both abutments.

Based on the bat surveys, the common bats are expected to forage throughout the Project area in suitable habitat. The Santa Clara River is probably the most important foraging area because many of the bat species in the Project area forage in riparian and wetland areas where there is high abundance and diversity of insect prey. Other tributaries to the River, such as Potrero Canyon, that support riparian and wetland habitat with adequate hydrology are also considered to be important foraging areas.

Because the common bats on site are mostly foraging habitat generalists, all natural habitats in the Project area are considered potential foraging habitat. The general physiognomic and location classifications (CDFG 2003) included in the impact analysis are scrub and chaparral, grass and herb dominated communities, bog and marsh, riparian and bottomland habitat, and broad leafed upland tree dominated. There is a total of 11,439 acres of suitable habitat in the Project area.

Direct Impacts

Implementation of the RMDP would result in permanent and temporary loss of habitat for the Bat guild species as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 206 acres (1.8%) of permanent loss and 118 acres of temporary impact;
- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary impact;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary impact;
- Alternative 5 – 212 acres (1.9%) of permanent loss and 142 acres of temporary impact;
- Alternative 6 – 213 acres (1.9%) of permanent loss and 135 acres of temporary impact; and
- Alternative 7 – 83 acres (0.7%) of permanent loss and 189 acres of temporary impact.

The permanent loss of potential habitat for common species in the Bat guild in the Project area in general would be similar under Alternatives 2 through 6, ranging from 1.6% for Alternatives 3 and 4 to 1.9% for Alternatives 5 and 6. Alternative 7 would have the smallest permanent direct impact, with 0.7% of the total impacted. Temporary impacts to habitat would also be similar, with the largest temporary impact occurring under Alternative 7.

The Santa Clara River corridor and adjacent upland habitat supports large numbers of common bats. Implementation of the RMDP will result in the temporary impacts to foraging habitat in the tributary drainages; however, construction of these facilities would be phased over many years and would not result in simultaneous construction and impacts to habitat. Because these bats are common and have widespread geographic distributions, and large areas of contiguous suitable habitat will remain, implementation of the RMDP and the SCP would not substantially affect the use of the Project area for foraging. Therefore impacts would be adverse but not significant under Alternatives 2 through 7.

Construction activities associated with implementation of the RMDP are not expected to result in mortality of adults foraging in this habitat. Adult bats are nocturnal and highly mobile and construction activities are not anticipated to occur during nighttime hours. However, if adults are flushed from a day roost site during construction activities, these

individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. If construction activities directly impacted an active day roost (solitary or colonial maternity site), individuals, including young, could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in mortality of the young. No day roosts for common bat species have been documented on site; however, there are structures or habitat features (*e.g.*, trees) that potentially provide day roost sites.

Implementation of the Project is not expected to result in injury or mortality to common bat species. Nighttime construction activities, if they should occur in foraging areas or in proximity to roost sites, could result in adverse effects, including altered foraging behavior and increased predation risk. Because these bats are common and have widespread geographic distributions, and large areas of contiguous suitable habitat will remain, these impacts resulting from implementation of the RMDP would be adverse but not significant under Alternatives 2 through 7.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in the permanent loss of habitat for species in the Bat guild as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 3,161 acres (27.6 %) of permanent loss;
- Alternative 3 – 2,950 acres (25.8%) of permanent loss;
- Alternative 4 – 2,825 acres (24.7%) of permanent loss;
- Alternative 5 – 2,741 acres (24.0%) of permanent loss;
- Alternative 6 – 2,524 acres (22.1%) of permanent loss; and
- Alternative 7 – 2,271 acres (19.8 %) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial impacts to individuals and loss of their habitat in large portions of the Project area under each alternative, ranging from 19.8% for Alternative 7 to 27.6% for Alternative 2. However, the bats in this guild observed or potentially occurring in the Project area are still common and have widespread geographic distributions and therefore would continue to forage in the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area.

Indirect impacts to Bat guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, if construction activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas directly impacted an active day roost, then individuals, including young, could be harassed, injured, or killed.

Secondary Impacts

Construction activities associated with RMDP facilities and the build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas have the potential to affect bats in areas adjacent to construction zones, because they generally are very sensitive to human disturbance (Zeiner *et al.* 1990B). Any day roosts in proximity to construction zones may be affected by short-term construction activities, including noise and increased human activity. Use of RMDP facilities (*e.g.*, roads, bridges, and lighting) could impact both day and night roost sites, as well as alter foraging behavior. In addition, because bats are highly sensitive to human disturbance, any day roosts in close proximity to urban development probably would be abandoned and thus permanently impacted in the long term. These impacts would be similar for Alternatives 2 through 7.

With regard to foraging activities, because bats are relatively mobile and are active at night, no substantial secondary direct impacts to foraging behavior due to construction activities are anticipated. Bats may change their foraging behavior somewhat to avoid construction zones and developed areas, but adequate remaining foraging habitat would be available in the Project area.

Both short-term construction-related and long-term secondary impacts to roost sites from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas could occur. However, because Bat guild species are common and widespread, and because they will continue to forage in the large, undeveloped portion of the Project area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

The direct and indirect loss of habitat, including any roost sites, and direct and indirect secondary impacts to the Bat guild species were determined to be adverse but not significant and, therefore, no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA,

High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system providing foraging and potential roosting habitat for bats. It is expected that the common species in this guild will continue to forage in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Bat guild species are listed in **Table 4.5-45.**

Table 4.5-45
Applicable Mitigation Measures for Impacts to the Bat Guild

Mitigation Measure(s)	Issue(s) Mitigating
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and High Country SMA) SP-4.6-48 (standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss and degradation of foraging habitat. Long-term secondary effects of increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to bat foraging behavior during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation.

Mammal – Low Mobility. Several common small mammals in this guild have been documented on site during mammal studies using live-trapping and track/scent station methods, including California ground squirrel, Botta's pocket gopher, desert cottontail,

brush rabbit, deer mouse, brush mouse, cactus mouse, California mouse, western harvest mouse, dusky-footed woodrat, California vole, California pocket mouse, and kangaroo rat[1] (Impact Sciences 2005). Several of these common rodents and the desert shrew were also captured during pitfall trapping for reptiles and amphibians (Impact Sciences 2006A). This guild also includes two special-status species: the San Diego desert woodrat, which is relatively common in suitable habitat on site, and the southern grasshopper mouse, which has not been documented in the Project area but has potential to occur on site. These special-status species are analyzed in detail in **Subsection 4.5.5.3**.

With the exception of the kangaroo rat, these species generally do not have the capacity to move large distances over unsuitable habitat in a short period of time, and even most dispersal movements by the kangaroo rat are relatively short distance. Most of these species probably inhabit the same general area for their entire lifetime. Although there are some differences among these species in their habitat associations, they generally use scrub, chaparral, and grassland habitats, although most will also use river wash and dry riparian areas, such as terrace and riparian ecotone habitats in the Santa Clara River. The general physiognomic and location classifications (CDFG 2003) for these habitats are scrub and chaparral and grass and herb dominated communities. A total of 8,782 acres of suitable habitat for common species in the Mammal – Low Mobility guild is present in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in injury or mortality of individuals of common species in the Mammal – Low Mobility guild and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 81 acres (0.9%) of permanent loss and 14 acres of temporary impact;
- Alternative 3 – 86 acres (1.0%) of permanent loss and 20 acres of temporary impact;
- Alternative 4 – 80 acres (0.9%) of permanent loss and 14 acres of temporary impact;
- Alternative 5 – 102 acres (1.2%) of permanent loss and 24 acres of temporary impact;

[1] Impact Sciences identified the resident kangaroo rat on site as the Pacific kangaroo rat (*Dipodomys agilis*), but based on the relatively low elevation on site, the species may have been the Dulzura kangaroo rat (*D. simulans*) according to a study by Sullivan and Best (1997) that separates the two species.

- Alternative 6 – 118 acres (1.3%) of permanent loss and 27 acres of temporary impact; and
- Alternative 7 – 61 acres (0.7%) of permanent loss and 76 acres of temporary impact.

The permanent loss of potential habitat with implementation of the RMDP for common species in the Mammal – Low Mobility guild in the Project area in general would be similar in relation to the total acreage of vegetation communities and land covers on site, ranging from 0.7% for Alternative 7 to 1.3% for Alternative 6. Temporary impacts would be similar for Alternatives 2 through 6, and somewhat greater for Alternative 7.

The species in this guild range from being abundant in a diversity of habitats (*e.g.*, deer mouse) to common in suitable habitat (*e.g.*, pocket gopher, pocket mouse, kangaroo rat) and all have widespread geographic ranges. Therefore, habitat loss for the Mammal – Low Mobility guild species resulting from implementation of the RMDP and the SCP would be adverse but not significant under Alternatives 2 through 7.

Because species in this guild are fossorial (burrowing or digging) and are not highly mobile, implementation of the RMDP would result in injury or mortality of individuals occupying this habitat during construction and/or grading activities. Individuals may be directly killed or injured by construction equipment or entombed in burrows. Individuals that escape from burrows may be killed by construction equipment or vehicles, suffer from predation, or be unable to find refuge in the construction zone.

Although some individuals may be harmed or lost during construction associated with the RMDP, because the species in this guild are common to abundant and have widespread geographic distributions, direct impacts resulting from implementation of the RMDP would be adverse but not significant under Alternatives 2 through 7.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to individuals of common species in the Mammal – Low Mobility guild and the permanent loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 2,967 acres (33.8%) of permanent loss;
- Alternative 3 – 2,799 acres (31.9%) of permanent loss;
- Alternative 4 – 2,693 acres (30.7%) of permanent loss;

- Alternative 5 – 2,611 acres (29.7%) of permanent loss;
- Alternative 6 – 2,438 acres (27.8%) of permanent loss; and
- Alternative 7 – 2,201 acres (25.1%) of permanent loss.

There would be progressively smaller impacts with each successive alternative, but there would be substantial loss of their habitat in large portions of the Project area under each alternative. However, these species are common to abundant in suitable habitat and have wide geographic ranges. They will persist in the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area, as well as adjacent undeveloped habitat.

Indirect impacts to Mammal – Low Mobility guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Similar to direct impacts, individuals of these species could be directly killed or harmed during construction activities, such as vegetation clearing and/or grading activities under Alternatives 2 through 7. The potential for impacts to individuals due to build-out of the Specific Plan, VCC, and Entrada planning areas is much greater compared to implementation of the RMDP because much more suitable habitat for these species would be affected. However, because these species are still common to abundant on site and have wide geographic ranges. Therefore, the indirect impacts to individuals from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Short-term construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas could cause collapsed burrows due to ground vibration; abandonment of burrows; and disruptions associated with increased human activity, noise, and nighttime illumination.

Habitat fragmentation and isolation is a secondary impact that may especially affect Mammal – Low Mobility guild species due to their relative lack of mobility and high risk of vehicle collisions. Exceptions are two urban-adapted species: California ground squirrel and Botta's pocket gopher. However, large intact areas of suitable habitat for this guild will be preserved in the High Country SMA, Salt Creek area, and River Corridor SMA and several existing culverts under SR-126 allow north–south movement. Landscape-level habitat connectivity will be maintained under Alternatives 2 through 7 for species in this guild. Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only),

and Entrada planning areas under Alternatives 2 through 7 would result in internal habitat fragmentation and potential isolation of some local populations of the Mammal – Low Mobility guild species, making them more vulnerable to extirpation in smaller habitat patches. At a local level within the developed Project area, species in this guild are expected to occur in the constrained but intact natural drainages and adjacent uplands in open space on site, such as Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Lion Canyon, and Castaic Creek, and use these drainages for both resident and movement habitat. Species in this guild are unlikely to be significantly constrained in their movement through these drainages where crossings are culverted (*e.g.*, under Alternative 2) rather than bridged (*e.g.*, under Alternative 7). Small mammals readily move through small culverts, especially those with natural, soft-bottom substrates (Ruediger and DiGiorgio 2007). Therefore, the potential for movement of these species through the Project area is similar for Alternatives 2 through 7.

In addition, over the long term, the close proximity of urban development to suitable habitat for species in this guild could result in abandonment of burrows; disruption of nocturnal activities; greater vulnerability to predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators (Crooks and Soulé 1999); and vulnerability to rodenticides that may be used to control pest rodents (*e.g.*, ground squirrels in landscaped areas or golf courses). These potential impacts are expected to be similar for Alternatives 2 through 7.

Although both short-term construction-related and long-term secondary impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur, because the species in the Mammal – Low Mobility guild are still common and widespread, and will persist in the large open space area comprising the River Corridor SMA, High Country SMA, and Salt Creek area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

All direct, indirect, and secondary impacts to the Mammal – Low Mobility guild species were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system that supports the common mammal species in this guild. It is expected that these species will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as

increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Mammal – Low Mobility guild species are listed in **Table 4.5-46.**

Table 4.5-46
Applicable Mitigation Measures for Impacts to the Mammal – Low Mobility Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA, which includes terrestrial habitats) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-20 (preservation of approximately 1,900 acres of coastal scrub on site) BIO-21 (restoration/enhancement of coastal scrub in the High Country SMA, Salt Creek area, and River Corridor SMA) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to nocturnal reptiles during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of rodenticides.

Mammal – Moderate Mobility. Common species in this guild known in the Project area include gray fox, long-tailed weasel, and raccoon. Special-status species in this guild include the American badger, ringtail cat, and San Diego black-tailed jackrabbit. These special-status species are analyzed in detail in **Subsection 4.5.5.3**. The raccoon and gray fox primarily use riparian and upland woodlands and forest or shrublands associated with water. The long-tailed weasel is a habitat generalist that occurs in most habitats that support prey except desert scrubs. Because these species use different habitats, a generalized analysis of direct habitat loss from implementation of the RMDP and indirect habitat loss from build-out of the Specific Plan, VCC, and Entrada planning areas is not applicable to this guild as a whole. Therefore, the raccoon and gray fox are analyzed separately from the long-tailed weasel. The habitat used for the raccoon and gray fox analysis is riparian and bottomland habitat and broad leafed upland tree dominated, which totals 2,450 acres in the Project area. Because the long-tailed weasel uses virtually all habitats on site, all vegetation communities and land covers (except developed) are used for this species, which total 14,288 acres in the Project area (the same acreage used above for the Insect guild).

Direct Impacts

Implementation of the RMDP and the SCP would result in injury or mortality to the raccoon and gray fox and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 113 acres (4.6%) of permanent loss and 100 acres of temporary impact;
- Alternative 3 – 91 acres (3.7%) of permanent loss and 107 acres of temporary impact;
- Alternative 4 – 92 acres (3.8%) of permanent loss and 97 acres of temporary impact;
- Alternative 5 – 101 acres (4.1%) of permanent loss and 112 acres of temporary impact;
- Alternative 6 – 86 acres (3.5%) of permanent loss and 103 acres of temporary impact; and
- Alternative 7 – 21 acres (0.9%) of permanent loss and 108 acres of temporary impact.

The permanent loss of habitat due to implementation of the RMDP would be similar for Alternatives 2 through 6 in relation to the total amount of habitat in the Project area, ranging from 3.5% for Alternative 6 to 4.6% for Alternative 2. Permanent loss of habitat

under Alternative 7 would be reduced, at 0.9%. Temporary impacts to habitat would be similar under all of the alternatives.

As shown in detail above for the Insect guild, permanent loss of habitat for the long-tailed weasel would generally be similar under Alternatives 2 through 6, with a range of 335 acres (2.3%) under Alternative 4 to 404 acres (2.8%) under Alternative 5. Permanent impacts under Alternative 7 would be substantially less at 172 acres. Temporary impacts would range from 201 acres under Alternative 2 to 572 acres under Alternative 7.

The species in the Mammal – Moderate Mobility guild, although not occurring in high densities, are commonly observed or detected by sign *(e.g.*, tracks, scat) in suitable habitat and they have widespread geographic distributions. There would be substantial remaining suitable habitat in the Project area and adjacent undeveloped lands to support these species. Therefore direct loss of habitat resulting from implementation of the RMDP would be adverse but not significant under Alternatives 2 through 7.

Although in most cases, adults in the Mammal – Moderate Mobility guild are mobile enough to escape from the direct effects of construction and/or grading activities, implementation of the RMDP could result in mortality of young in a natal den (raccoon and fox) or burrow (weasel). In addition, adults that are flushed from dens or burrows or that try to escape from construction areas are at much higher risk of a vehicle collision. Individuals that cannot find suitable habitat for refuge or are disoriented from being displaced would also be at greater risk of mortality. However, because species in the Mammal – Moderate Mobility guild would persist on site in the large open space system and because they are common and have broad geographic ranges, direct impacts to individuals resulting from implementation of the RMDP would be adverse but not significant under Alternatives 2 through 7.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury or mortality to the raccoon and gray fox and the permanent loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 192 acres (7.8%) of permanent loss;
- Alternative 3 – 151 acres (6.2%) of permanent loss;
- Alternative 4 – 131 acres (5.3%) of permanent loss;
- Alternative 5 – 130 acres (5.3%) of permanent loss;

- Alternative 6 – 86 acres (3.5%) of permanent loss; and
- Alternative 7 – 70 acres (2.9%) of permanent loss.

There would be progressively smaller permanent impacts to habitat for gray fox and raccoon with each successive alternative, with a range of 7.8% for Alternative 2 to 2.9% for Alternative 7. As shown in detail above for the Insect guild, permanent loss of habitat for the long-tailed weasel as a result of build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would also be progressively smaller with each successive alternative, ranging from 4,491 acres (34.6%) under Alternative 2 to 3,728 acres (26.1%) under Alternative 7.

These species will persist in the large, undeveloped portions of the Project area, such as the River Corridor SMA, High Country SMA, Salt Creek area, and Open Area. Indirect impacts for the long-tailed weasel would be substantially greater, but this species also will persist in the undeveloped portions of the Project area. In addition, the species in this guild have widespread distributions and are relatively common throughout their geographic ranges. Therefore, indirect impacts to Mammal – Moderate Mobility guild species from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

As noted above, adults in this guild are mobile enough to escape from the direct effects of construction and/or grading activities, but young in dens or burrows could be affected, flushed adults would be vulnerable to vehicle collision, and individuals that cannot find suitable habitat for refuge would also be at greater risk of mortality. However, because species in the Mammal – Moderate Mobility guild would persist on site in the large open space system and because they are common and have broad geographic ranges, indirect impacts to individuals resulting from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have the potential to affect species in this guild in areas adjacent to construction zones. These impacts, such as vibration, noise, lighting, and increased human activity, could result in disruptions of essential behavioral activities (*e.g.*, foraging, breeding, and rearing of young).

Habitat fragmentation and isolation and associated roads adjacent to suitable habitat for Mammal – Moderate Mobility guild species will result in an increased risk of vehicle collisions for species in this guild. Raccoons in particular suffer a particularly high level

of vehicle collisions in urban and agricultural areas. However, large intact areas of suitable habitat for this guild will be preserved in the High Country SMA, Salt Creek area, and River Corridor SMA and several existing culverts under SR-126 allow north–south movement. Landscape-level habitat connectivity will be maintained under Alternatives 2 through 7 for species in this guild. Build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would result in internal habitat fragmentation and potential isolation of some local populations of the Mammal – Moderate Mobility guild species, making them more vulnerable to extirpation. Species in this guild will probably continue to use constrained drainages, such as Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Lion Canyon, and Castaic Creek as resident habitat after build-out of the Project area where adequate vegetative cover is present, and as movement habitat where there is a lack of cover. None of the species in this guild are likely to be significantly constrained in their movement through these drainages where crossings are culverted (*e.g.*, under Alternative 2) rather than bridged (*e.g.*, under Alternative 7). These species readily move through small culverts, especially those with natural, soft-bottom substrates (Ruediger and DiGiorgio 2007). Therefore, the potential for movement of these species through the Project area is similar for Alternatives 2 through 7.

Other long-term secondary impacts include nighttime illumination, which could affect essential behavioral activities; increased human activity; potential harassment by humans and pet, stray, and feral cats and dogs; and use of rodenticides.

Although both short-term construction-related and long-term secondary impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur, because the species in the Mammal – Moderate Mobility guild are still common and widespread, and will persist in the large open space area comprising the River Corridor SMA, High Country SMA, and Salt Creek area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

All direct, indirect, and secondary impacts to the Mammal – Moderate Mobility guild species were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of upland and riparian habitat areas in the River Corridor SMA, High Country SMA, and Salt Creek area that will form a large, contiguous open space system that supports the common mammal species in this guild. It is expected that these species will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce

short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to nesting and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and rodenticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Mammal – Moderate Mobility guild species are listed in **Table 4.5-47.**

Table 4.5-47
Applicable Mitigation Measures for Impacts to the Mammal – Moderate Mobility Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts to their habitat.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA, which includes terrestrial habitats) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-20 (preservation of approximately 1,900 acres of coastal scrub on site) BIO-21 (restoration/enhancement of coastal scrub in the High Country SMA, Salt Creek area, and River Corridor SMA) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to nocturnal reptiles during construction and over the long term due to development.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of rodenticides.

Mammal – High Mobility. The common species in this guild known on site are the bobcat and coyote. Special-status species occurring within the Project area are the American black bear, mule deer, and mountain lion. All of these species, except the black bear, are resident on site. The black bear may use the Project area for dispersal between mountainous regions to the north and south of the site. The special-status species are analyzed in detail in **Subsection 4.5.5.3**.

The coyote and bobcat use a similar mix of riparian and upland habitats in the Project area, although coyotes will also forage in grassland areas that are less likely to be used by bobcats. For the purpose of this analysis, the general physiognomic and location classifications (CDFG 2003) for habitat typically used by both species are scrub and chaparral, riparian and bottomland habitat, and broad leafed upland tree dominated. A total of 8,932 acres of suitable habitat for the Mammal – High Mobility guild is present in the Project area.

Direct Impacts

Implementation of the RMDP and the SCP would result in injury or mortality of coyote and bobcat individuals and the permanent and temporary loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 170 acres (1.9%) of permanent loss and 104 acres of temporary impact;
- Alternative 3 – 145 acres (1.6%) of permanent loss and 113 acres of temporary impact;
- Alternative 4 – 148 acres (1.7%) of permanent loss and 100 acres of temporary impact;
- Alternative 5 – 161 acres (1.8%) of permanent loss and 120 acres of temporary impact;
- Alternative 6 – 139 acres (1.6%) of permanent loss and 113 acres of temporary impact; and
- Alternative 7 – 63 acres (0.7%) of permanent loss and 130 acres of temporary impact.

The permanent loss of suitable habitat for coyote and bobcat n the Project area would be similar for Alternatives 2 through 6 in relation to the total available habitat, ranging from 1.6% for Alternative 6 to 1.9% for Alternative 2. Alternative 7 would have the smallest permanent direct impact at 0.7%. Temporary impacts would be similar under all of alternatives.

Both the coyote and bobcat have wide geographic distributions. The coyote is common and adaptable to urban settings. The bobcat is less common than the coyote, but is still relatively common where there is suitable habitat. Because both species would persist on site in the large open space system and because they are common and have broad geographic ranges, direct loss of habitat resulting from implementation of the RMDP and indirect impacts would be adverse but not significant under Alternatives 2 through 7.

Because these species are highly mobile, they would be expected to leave and/or avoid construction zones. It is unlikely that RMDP construction activities would result in direct harm to or mortality of adults, although flushed individuals would be at higher risk of injury or mortality from vehicle collisions. In addition, both the bobcat and coyote may den in the RMDP project area and, therefore, construction activities may cause them to abandon dens and expose young to injury or mortality. Both the bobcat and coyote are still common and have wide geographic ranges and will persist on site and adjacent undeveloped habitat. Therefore impacts to individuals, including disturbance of a natal den, would be adverse but not significant under Alternatives 2 through 7.

Implementation of the SCP would not directly impact these species.

Indirect Impacts

The build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would result in injury and mortality to coyotes and bobcats and the permanent loss of their habitat as a result of vegetation clearing and grading under Alternatives 2 through 7, as follows:

- Alternative 2 – 2,116 acres (23.7%) of permanent loss;
- Alternative 3 – 1,984 acres (22.2%) of permanent loss;
- Alternative 4 – 1,913 acres (21.4%) of permanent loss;
- Alternative 5 – 1,861acres (20.8%) of permanent loss;
- Alternative 6 – 1,678 acres (18.8%) of permanent loss; and
- Alternative 7 – 1,549 acres (17.3%) of permanent loss.

Indirect impacts to habitat for the coyote and bobcat would be progressively smaller for each successive alternative, but would still be substantial under each alternative. However, both species are still common and have wide geographic ranges. Further, there would still be substantial habitat remaining for these species in the Project area in the High Country SMA, Salt Creek area, and River Corridor SMA, as well as undeveloped adjacent habitat. These species would persist in the Project vicinity. Therefore, indirect impacts to individuals and habitat resulting from build-out of the Specific Plan, VCC

(Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

As noted above, adults of these species are mobile enough to escape from the direct effects of construction and/or grading activities, but young in dens could be affected and flushed adults would be more vulnerable to vehicle collisions. However, because both the coyote and bobcat would persist on site in the large open space system and because they are common and have widespread geographic ranges, indirect impacts to individuals resulting from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be adverse but not significant under Alternatives 2 through 7.

Secondary Impacts

Short-term secondary impacts associated implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas include nighttime illumination, noise, and human presence during construction activities. However, bobcats and coyotes typically forage and move at night, and alterations of foraging or movement behaviors outside the construction zones are expected to be minimal, except where lighting may spill into habitat.

Long-term secondary impacts associated with urban development would be variable. Both the bobcat and coyote would be expected to use the three large preserved open space areas—the High Country SMA, Salt Creek area, and River Corridor SMA—for movement through the Project vicinity after build-out. Because coyotes are urban-adapted, they would continue using the constrained linkages, including Potrero Canyon, San Martinez Grande Canyon, Chiquito Canyon, Long Canyon, and Castaic Creek. Bobcats also would use these linkages as long as adequate vegetative cover is provided, and both species would use both culverts and bridge openings along the drainages.

Other long-term secondary impacts that could affect coyotes and bobcats include nighttime illumination of areas adjacent to open space, which could disrupt foraging and movement behavior; increased vehicle collisions at new and expanded roadways; increased encounters with humans and pet, stray, and feral dogs (cats are not capable of preying on these animals or their young, due to their relative size and/or ferocity); and the use of rodenticides to control small mammals (*e.g.*, ground squirrels and rabbits, which are prey for bobcats and coyotes), which may reduce the prey populations and possibly cause secondary poisoning of predators.

Although both short-term construction-related and long-term secondary impacts from build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas are expected to occur, because the coyote and bobcat are still common and have widespread distributions, and will persist in the large open space area comprising the

River Corridor SMA, High Country SMA, and Salt Creek area, these secondary impacts would be adverse but not significant under Alternatives 2 through 7.

Mitigation Strategy and Summary

All direct, indirect, and secondary impacts to the common Mammal – High Mobility guild species (coyote and bobcat) were determined to be adverse but not significant and, therefore, no mitigation is required. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to these species. These mitigation measures include habitat preservation, restoration, enhancement, and management of upland and riparian habitat areas in the River Corridor SMA, High Country SMA, and Salt Creek area that will form a large, contiguous open space system that supports the common species in this guild. Riparian and coastal scrub restoration and enhancement, for example, will provide additional cover for bobcats and coyotes. It is expected that these species will persist in these areas after build-out of the Project area. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, lighting, and increased human activity during construction because individuals will have access to denning and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral dogs; lighting; and rodenticides will also be mitigated through a variety of measures. The key mitigation measures that will reduce impacts to Mammal – High Mobility guild species are listed in **Table 4.5-48.**

Table 4.5-48
Applicable Mitigation Measures for Impacts to the Mammal – High Mobility Guild

Mitigation Measure(s)	Issue(s) Mitigating
BIO-52 (pre-construction educational meetings, construction-limit staking, and biological monitoring during vegetation clearing and grading activities)	Short-term construction-related impacts from increased human activity and inadvertent injury or mortality to individuals and impacts their habitat.
SP-4.6-1 through SP-4.6-16, SP-4.6-63 (habitat restoration/enhancement in the River Corridor SMA, which includes terrestrial habitats) SP-4.6-17 (standards for trail design and limitations on human and pet access to the River Corridor SMA) SP-4.6-18 and SP-4.6-19 (transition areas along the River Corridor SMA) SP-4.6-21 through SP-4.6-26 (open space dedication of the River Corridor SMA) SP-4.6-27 (removal of grazing and enhancement of riparian habitat in the High Country SMA) SP-4.6-30 through SP-4.6-32 (pet, public access, and recreational use restrictions in High Country SMA) SP-4.6-36 through SP-4.6-42 (open space dedication of the	Loss, fragmentation, and degradation of habitat. Long-term secondary effects of non-native plant species, and increased human and pet activity.

Table 4.5-48
Applicable Mitigation Measures for Impacts to the Mammal – High Mobility Guild

Mitigation Measure(s)	Issue(s) Mitigating
River Corridor SMA and the High Country SMA) BIO-1 through BIO-16, BIO-22 (wetlands mitigation plan and riparian and oak restoration activities on the Project site) BIO-19 (dedication of the Salt Creek area to the public and enhancement of existing agricultural undercrossing at SR-126) BIO-20 (preservation of approximately 1,900 acres of coastal scrub on site) BIO-21 (restoration/enhancement of coastal scrub in the High Country SMA, Salt Creek area, and River Corridor SMA) BIO-69 (trail signage and homeowner education regarding sensitive resources in preserved natural areas)	
SP-4.6-56 (downcast lighting design along boundaries of natural areas)	Control of lighting impacts to nocturnal reptiles during construction and over the long term due to development.
BIO-59 (signage indicating road crossings for mule deer and mountain lion)	Reduce vehicle collisions at high-frequency crossings.
BIO-63 (control of pet, stray, and feral cats and dogs in or near open space areas)	Harassment and predation of slow-moving reptiles.
BIO-64 (develop an IPM plan that addresses pesticide use)	Long-term effect of rodenticides.

4.5.5.2.3.5 *Impacts to Special-Status Plant Species*

This subsection provides a general overview of impacts to special-status plant species that would occur as a result of implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7. This general overview of impacts includes direct and indirect permanent loss, direct temporary loss, and secondary impacts. **Subsection 4.5.5.3**, Impacts to Special-Status Species, provides a more detailed species-by-species analysis, makes impact significance determinations, and identifies mitigation measures that would reduce significant impacts to a level less than significant.

As described in **Subsection 4.5.5.1**, Impact Analysis Approach, direct impacts would occur as a result of implementation of the RMDP and SCP and include the temporary disturbance and/or permanent loss of special-status plant species. Indirect impacts would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas and would be permanent. The temporary disturbance and/or permanent impacts discussed here represent the absolute physical loss of individuals of a special-status plant species. As also described in **Subsection 4.5.5.1**, Impact Analysis Approach, for special-status plant species, loss of individuals is reported as the loss of individuals, loss of acreage of mapped plant population polygons, or acreage of habitat in which the species occurs, as applicable. As described in **Subsection 4.5.5.1**, Impact Analysis Approach, secondary impacts are those reasonably foreseeable effects caused by Project implementation, including implementation of the RMDP and SCP (direct) and build-out of the Specific Plan, VCC, and Entrada planning areas (indirect) on remaining or adjacent biological resources outside the construction disturbance zone. Secondary impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas.

As described in **Subsection 4.5.3.2.2**, Botanical Surveys, polygons for SFVS were mapped with a GPS unit. Oak trees within the portions of the study area (including a 200-foot buffer) where development would occur were mapped with a GPS unit. The number of oak trees to be preserved within protected areas (*e.g.*, High Country and River Corridor SMAs, and the Salt Creek area) was estimated based on aerial photo interpretation and evaluated in the field *via* a sampling protocol and later statistically analyzed for population estimates. Other special-status species were mapped utilizing aerial photography and topographic maps, with the exception of CNPS List 4 species, which were considered to have a relatively low sensitivity level and were not mapped. These data were imported into a GIS database for analysis and the development of maps and graphics. The locations of the following special-status plant species were mapped: SFVS, slender mariposa lily, Plummer's mariposa lily, late-flowered mariposa lily, undescribed everlasting, undescribed sunflower, Ojai navarretia, and oak species. The locations of the following lower-sensitivity species were not mapped: southern California black walnut, southwestern spiny rush, oak-leaved nemophila, mainland cherry, island mountain mahogany, Parish's sagebrush, and Peirson's morning-glory.

The number of individual SFVS plants on site varies considerably from year to year. Potential impacts to this species are therefore primarily evaluated in terms of the loss of cumulative area occupied by SFVS mapped between 2002 and 2007, rather than by the number of individuals (**Table 4.5-49**).

Table 4.5-49
Permanent Direct Loss of Cumulative Area for SFVS Due to Implementation of the SCP for Alternatives 2 through 7 (Acres)

Alternative	2	3	4	5	6	7
Total cumulative occupied acres lost	6.36	4.54	3.53	3.18	2.32	0.36

Table 4.5-50 provides a summary of the remaining special-status plant species whose locations were mapped that would be lost as a result of the implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas for Alternatives 2 through 7.

Table 4.5-51 provides a summary of those special-status plant species whose locations were not mapped and whose suitable habitat would be lost as a result of the implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas for Alternatives 2 through 7. **Table 4.5-51** also includes the cumulative occupied area for slender mariposa lily.

Table 4.5-50
Direct Loss (within Both the Permanent and Temporary Footprints) of Special-Status Plant Species for Alternatives 2 through 7 (Number of Individuals)

	Alternative											
	2		3		4		5		6		7	
	Direct Perm	Indirect Perm	Direct Perm	Indirect Perm	Direct Perm	Indirect Perm	Direct Perm	Indirect Perm	Direct Perm	Indirect Perm	Direct Perm	Indirect Perm
slender mariposa lily	52	30,593	52	29,429	52	28,926	51	8,970	21	28,521	16	8,798
Plummer's mariposa lily	0	0	0	0	0	0	0	0	0	0	0	0
late-flowered mariposa lily	0	0	0	0	0	0	0	0	0	0	0	0
oak trees	220	1,087	226	914	219	860	338	880	271	579	304	541
undescribed everlasting	7	350	7	350	7	0	7	0	7	0	7	0

Table 4.5-51
Permanent and Temporary Loss of Suitable Habitat (or Cumulative Occupied Area where Noted) for Special-Status Plant Species for Alternatives 2 through 7 (Acres)

	Alternative																	
	3			4			5			6			7					
	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm
island mountain-mahogany[1]	30	0.0	519	29	0.0	506	31	0.0	496	30	0.0	498	30	0.0	490	32	0.0	379
Peirson's morning-glory	95	0.0	2,966	106	0.0	2,798	94	0.0	2,692	124	0.0	2,612	146	0.0	2,347	136	0.0	2,062

2

Table 4.5-51
Permanent and Temporary Loss of Suitable Habitat (or Cumulative Occupied Area where Noted) for Special-Status Plant Species for Alternatives 2 through 7 (Acres)

	Alternative																	
	3			4			5			6			7					
	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm	Direct Perm	Direct Temp	Indirect Perm
slender mariposa lily cumulative occupied area	0.7	0.0	71	0.7	0.0	64	0.7	0.0	61	0.7	0.0	50	0.2	0.0	49	0.3	0.0	54
southwestern spiny rush[2]	2.7	4.3	0.9	1.8	4.4	0.6	1.8	4.3	0.2	2.2	5.1	0.0	2.0	4.1	0.0	0.5	3.3	0.0
Parish's sagebrush	24	5.2	47	22	6.2	34	22	5.1	32	22	6.6	35	16	6.5	17	2.6	21	9.3
oak-leaved nemophila	11	0.0	85	11	0.0	66	10	0.0	65	14	0.0	66	19	0.0	41	19	0.0	44
mainland cherry	88	0.0	81	89	0.0	63	83	0.0	48	91	0.0	48	78	0.0	24	62	0.0	15

[1] Permanent loss of suitable habitat for island mountain-mahogany, Peirson's morning-glory, slender mariposa lily, oak-leaved nemophila, and mainland cherry includes suitable habitat within both the permanent and temporary footprints, as these species occur primarily in non-jurisdictional (CDFG/Corps) upland vegetation communities.

[2] Permanent and temporary loss of suitable habitat are described for Parish's sagebrush and southwestern spiny rush, as these species occur primarily in jurisdictional (CDFG/Corps) riparian vegetation communities.

Direct Impacts

For special-status plant species for which number of individuals and/or occupied polygons and locations were mapped, impacts are assessed by loss of individuals. Implementation of the RMDP and SCP under Alternatives 2 through 7 would result in the direct permanent loss of documented SFVS, slender mariposa lilies, undescribed everlasting, and oak trees, including heritage oaks as defined by CLAOTO (County of Los Angeles 1988); and no direct temporary loss of any of the four (**Table 4.5-50**, Direct Loss (within Both the Permanent and Temporary Footprints) of Special-Status Plant Species for Alternatives 2 through 7). Impacts to slender mariposa lily were also calculated by cumulative occupied area, in addition to number of individuals (**Table 4.5-51,** Permanent and Temporary Loss of Suitable Habitat (or Cumulative Occupied Area where Noted) for Special-Status Plant Species). Implementation of Alternatives 2 through 7 would result in successively fewer direct impacts to SFVS as with each successive alternative, additional spineflower preserve acreage would be dedicated at the spineflower populations compared to Alternative 2, and a spineflower preserve would be established within the VCC planning area.

For slender mariposa lily, direct impacts under Alternatives 2 through 5 are similar in terms of number of individuals and cumulative occupied area lost as this species is associated with uplands vegetation communities and the differences among the alternatives focuses on varying degrees of avoidance of riparian areas and SFVS occurrence areas. Under Alternative 7, implementation of the RMDP and SCP would result in a decrease in permanent direct impacts to slender mariposa lily due to reduced grading within Lion Canyon.

For oak trees, direct permanent impacts under Alternatives 2 through 7 would not be substantially different in terms of number of individuals lost as this species is associated with uplands vegetation communities and upper terraces along the Santa Clara River, and the differences among the alternatives focus on varying degrees of avoidance of riparian areas and SFVS occurrence areas.

For special-status plant species whose locations were not mapped as individuals or occupied polygons, impacts are assessed in terms of acreage of suitable habitat impacted (**Table 4.5-51**, Permanent and Temporary Loss of Suitable Habitat (or Cumulative Occupied Area where Noted) for Special-Status Plant Species). Implementation of the RMDP and SCP under Alternatives 2 through 7 would result in the direct permanent loss of suitable habitat for the following special-status plant species: island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, and mainland cherry. Permanent loss of suitable habitat for island mountain-mahogany, Peirson's morning-glory, oak-leaved nemophila,

and mainland cherry includes suitable habitat within both the permanent and temporary footprints, as these species occur primarily in non-jurisdictional (CDFG/Corps) upland vegetation communities. The non-jurisdictional (CDFG/Corps) temporary disturbance areas would not all be restored to the same vegetation community associations and alliances as currently present, but they would be restored as part of channel reconstruction and would be converted to native riparian and upland vegetation communities, which may include non-jurisdictional (CDFG/Corps) upland vegetation communities at higher elevations along the channel banks. Implementation of the RMDP would result in the temporary loss of suitable habitat for the following special-status plant species: southwestern spiny rush and Parish's sagebrush. Permanent and temporary loss of suitable habitat are described for Parish's sagebrush and southwestern spiny rush, as these species occur primarily in jurisdictional (CDFG/Corps) riparian vegetation communities. Temporary disturbance areas in jurisdictional (CDFG/Corps) riparian vegetation communities would be restored to the same vegetation community associations and alliances as currently present, including the native species components (such as Parish's sagebrush and southwestern spiny rush) of the existing communities.

In general, the direct permanent and temporary loss of suitable habitat for these species under Alternatives 2 through 6 is substantially the same. Under Alternative 7, the direct permanent loss of potential habitat is generally reduced, compared to Alternatives 2 through 6. Under Alternative 7, the direct temporary loss of suitable habitat is generally less, compared to Alternatives 2 through 6 for southwestern spiny rush. Both these increases in direct temporary impacts and decreases in direct permanent impacts can be attributed to pulling back the RMDP development footprint from the Santa Clara River and associated tributaries under Alternative 7. Under Alternative 7, the direct temporary loss of suitable habitat is generally greater, compared to Alternatives 2 through 6 for Parish's sagebrush. This is also due to pulling back the RMDP development footprint from the Santa Clara River and associated tributaries under Alternative 7, resulting in increased temporary disturbance to big sagebrush scrub located adjacent to the Santa Clara River and its tributaries.

Implementation of the proposed RMDP and SCP would not result in the direct permanent or temporary direct loss of the 27 acres of mapped California walnut woodland on site. Individual southern California black walnut trees are uncommon in other vegetation communities, but implementation of the RMDP is expected to result in the removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland.

Individuals of these species would be directly harmed during construction activities such as vegetation clearing and/or grading activities. These impacts to special-status species and applicable mitigation measures are discussed fully in **Subsection 4.5.5.3**.

Indirect Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the indirect permanent loss of documented slender mariposa lilies and oaks, including heritage oaks as defined by CLAOTO (County of Los Angeles 1988). Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in any additional indirect impacts to SFVS compared to the direct impacts described above.

For slender mariposa lily, indirect impacts under Alternatives 2, 3, 4, and 6 are similar in terms of number of individuals lost, as this species is associated with uplands vegetation communities and the differences among the alternatives focuses on varying degrees of avoidance of riparian areas and SFVS occurrence areas. Under Alternatives 5 and 7, permanent indirect impacts to slender mariposa lily individuals would be substantially less because of an increase in size of the spineflower preserve areas. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7. Permanent indirect impacts to slender mariposa lily cumulative occupied area generally decrease from Alternative 2 through Alternative 7, due to successively reduced project footprints and an increase in size of the spineflower preserve areas (Alternative 6 provides the greatest area of spineflower preserves, which also benefits the slender mariposa lily).

For oak trees, indirect permanent impacts under Alternatives 3 through 7 would be reduced compared to Alternative 2. The reduced impacts would be due to successively greater pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions that would reduce impacts to oak trees, which are primarily associated with uplands vegetation communities and upper terraces along the Santa Clara River. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7.

Under Alternatives 2 and 3, indirect permanent impacts would result in the loss of 350 undescribed everlasting individuals within the VCC planning area. Because no development would occur at the VCC planning area under Alternatives 4 through 7, there would be no permanent indirect impacts to undescribed everlasting plants under these alternatives. It should be noted, however, that because the undescribed everlasting is a floodplain species, the location of individuals may change prior to construction commencement.

For special-status plant species whose locations were not mapped by individuals or occupied polygons, impacts are assessed in terms of acreage of suitable habitat impacted. Indirect impacts would result in the loss of suitable habitat for the following special-status plant species: island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, and mainland cherry.

In general, indirect permanent loss of suitable habitat for these species due to build-out of the Specific Plan, VCC, and Entrada planning areas manifests a general trend of reduction in loss, successively from Alternative 2 to Alternative 7. This is primarily due to an increase in the size of the spineflower preserve areas. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7.

Build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7 would not result in the indirect permanent loss of the 27 acres of mapped California walnut woodlands on site. However, Project implementation is expected to result in the loss of individual southern California black walnut trees that exist in vegetation communities other than California walnut woodlands.

As described above for direct impacts, individuals of these species would be directly harmed during construction activities such as vegetation clearing and/or grading activities. These impacts to special-status species and applicable mitigation measures are discussed fully in **Subsection 4.5.5.3.3**.

Secondary Impacts

Secondary impacts are those reasonably foreseeable effects to biological resources located outside the construction disturbance zone and caused by Project implementation on remaining or adjacent biological resources. Secondary impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas. Both implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in short-term construction-related secondary impacts and long-term secondary impacts under Alternatives 2 through 7.

Short-Term Secondary Impacts (RMDP/SCP and Specific Plan/VCC/Entrada). Short-term secondary impacts that could occur to special-status plants species as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 2 through 7 include the following:

Hydrologic Alterations and Water Quality Impacts. Construction of RMDP facilities, including bank stabilization, construction of bridges and associated piers and abutments, and construction of drainage culverts could result in hydrologic and water-quality-related impacts adjacent to and downstream of the impact area. Hydrologic alterations include changes in flow rates and patterns in streams and rivers, and dewatering that may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities and their associated plant species. Potential water quality impacts include exposure to chemical and toxic compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation.

Proposed development can also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into known special-status plant populations. Altered erosion, increased surface flows, and underground seepage may lead to the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna. Short-term hydrologic alterations and water quality impacts due to implementation of the RMDP and SCP under Alternatives 2 through 7 would potentially affect the undescribed everlasting, undescribed sunflower, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, southern California black walnut, oak trees, and mainland cherry. Short-term hydrologic alterations and water quality impacts due to build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would potentially affect SFVS, slender mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

Erosion and Chemical and Toxic Compound Pollution. Erosion and chemical pollution (fuel, oil, lubricants, paints, release agents, and other construction materials) may affect riparian and upland special-status plant species. The use of chemical pollutants during the development stage can decrease the number of plant pollinators, increase the existence of non-native plants, and can cause damage and destruction of native plants. Erosion and chemical pollution due to implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would potentially affect SFVS, slender mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

Dust. Excessive dust can decrease the vigor and productivity of plant communities, through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases. Impacts due to dust from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would potentially affect SFVS, slender mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

Accidental Clearing, Trampling, or Grading. Accidental clearing, trampling, or grading of vegetation communities outside designated construction zones may occur during

construction. These effects can damage individual special-status plants and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, increasing soil compaction and leading to soil erosion. Accidental clearing, trampling, or grading due to implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 would potentially affect SFVS, slender mariposa lily, late-flowered mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

***Oak Tree Root Impacts*.** Oak tree root systems may be affected during construction due to soil compaction, pollutants, or toxic compounds. Implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7 may result in root impacts to oak trees.

Long-Term Secondary Impacts (RMDP/SCP and **Specific Plan/VCC/Entrada).** The following long-term secondary impacts could occur to special-status plant species as a result of build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas under Alternatives 2 through 7, and would potentially affect SFVS, slender mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

***Invasive Plant Species*.** Invasive plant species that thrive in edge habitats are a well-documented problem along the open space–urban interface in southern California as well as throughout the United States. The California Invasive Plant Council (Cal-IPC 2008) lists several adverse effects of non-native species in natural open space areas, including: non-native plants degrade wildlife habitat value (*e.g.*, by forming monocultures that displace native communities that provide food and shelter for native wildlife) and are considered to be the greatest threat to threatened and endangered species after habitat destruction; certain invasive plants can increase fuel loads compared to native plants and facilitate more frequent and catastrophic fires; and some invasive plants (*e.g.*, giant reed and tamarisk) consume enormous amounts of water that is lost to native plants and wildlife.

The introduction of non-native plants poses a significant threat to special-status plant species. Exotic (non-native) plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. The successful invasion

of exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species.

Non-native species have been found to invade and become established after repeated burnings, clearing of vegetation for fire protection, or following periods of drought and overgrazing—possible side effects of nearby human habitation. Exotic plants can alter hydrologic and biochemical cycles, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development. Development would also potentially fragment native plant populations, which could increase the likelihood of invasion by exotic plants due to the increased "edge," or interface, between natural habitats and urban areas.

Invasive plant species, and especially upland species, are often treated as an edge effect because they generally colonize modified or otherwise disturbed zones between development and natural open space areas. However, invasive species can colonize virtually any upland natural area that is subject to some kind of disturbance, such as road shoulders, cleared zones along railroad lines, clearing along utility easements, excessive fire, fire breaks, and grazing. Many species, like black mustard (*Brassica nigra*) and non-native annual grasses of Mediterranean origin (*e.g.*, *Bromus* spp., *Hordeum* spp., and *Avena* spp.) have become naturalized to the point that they are beyond realistic control measures at a landscape level. Currently, the main risk to upland areas by these species is the high frequency of fires in the region that could result in permanent transitions of coastal scrub and chaparral to annual grassland.

Riparian and wetland systems are also extremely vulnerable to invasive plants, such as giant reed (*Arundo donax*), tamarisk (*Tamarix* spp.), and pampas grass (*Cortaderia* sp.) because of the highly effective transport of these along rivers and streams. These species can dominate the biomass of riparian and wetlands communities where they become established, virtually choking out the native vegetation.

An increase in invasive plant species due to implementation of the RMDP and SCP under Alternatives 2 through 7 would potentially affect SFVS, slender mariposa lily, late-flowered mariposa lily, undescribed everlasting, undescribed sunflower, island mountain-mahogany, Peirson's morning-glory, southwestern spiny rush, Parish's sagebrush, oak-leaved nemophila, southern California black walnut, oak trees, and mainland cherry.

Increased Human Activity. Implementation of the RMDP would result in the permitted recreational use of trails in the High Country SMA by humans and their pets. This would result in the potential for unauthorized impacts, including trespassing, vandalism, motorized and non-motorized off-road vehicles, trampling of vegetation, and soil compaction. These impacts under Alternatives 2 through 7 would potentially affect slender mariposa lily and late-flowered mariposa lily.

Non-Native, Invasive Animal Species. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for special-status plant species.

Vegetation Clearing. When native vegetation is cleared for fire protection or for the creation of roads or trails, non-native plant species may colonize gaps or bare areas. Clearing also causes local changes in wind, solar radiation and light exposure, and water that may have substantial effects on native vegetation (Saunders *et al.* 1991).

Trampling and Compaction of Soils. Increases in human activity along the open space–urban interface may result in trampling of vegetation and compaction of soils, affecting the viability of plant communities. Trampling can damage individual special-status plants and alter their ecosystem. Trampling can also create gaps in vegetation, allowing exotic, non-native plant species to become established. It can increase soil compaction and it can lead to soil erosion. Trampling of vegetation and compaction of soils probably also interacts with the microclimate/microhabitat alterations, discussed in Vegetation Clearing above, especially water alterations and related effects at habitat edges, such as changes in the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion.

Altered Hydrology. Increased urban and stormwater runoff due to the increase in impervious surfaces from build-out of the Project area may result in long-term hydrologic alterations, including increased runoff volume, increased peak flow rates, increased duration of flows, and altered patterns in streams and rivers. Groundwater levels may be affected as a result of interference with groundwater recharge that could cause a deficit in aquifer volumes or lowering of the local groundwater table. These hydrologic alterations may affect adjacent and downstream riparian vegetation and associated special-status plant species.

Proposed development can also result in an increase in ornamental landscaping and lawns, which ultimately lead to increased irrigation and thus, increased erosion. Increased surface flows and underground seepage can allow for the establishment of non-native plants and invasion by Argentine ants.

Chemical Pollutants. The use of chemical pollutants by residents of new development may directly affect vegetation communities and habitat quality, may be directly toxic to species, may be indirectly toxic through prey vectors, can decrease the number of plant pollinators, and can increase the existence of non-native plants. These substances may penetrate the open space–urban interface through urban runoff from residential and commercial landscape areas and golf courses, overspray, wind, direct applications in interface areas, soil penetration, and wildlife vectors. Specifically, herbicide use can cause fragmentation of native plant populations, and insecticide use can result in

pollution drift. Fertilizers, especially nitrogen-rich fertilizers, can promote the growth of non-native species, to the detriment of native species not adapted to high nitrogen environments and/or that are unable to compete with non-native species.

Increased Fire Frequency/Extent/Intensity. Urbanization alters natural wildfire regimes in terms of frequency, extent, and intensity. These types of fire regime alteration can drastically affect plant communities. As stated in **Subsection 4.5.5.1**, longer-than-natural fire intervals can result in excessive buildup of fuel loads, so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and in some cases, result in permanent transitions of the vegetation to non-native communities, such as annual grassland and weedy communities (*e.g.*, Malanson and O'Leary 1982; Keeley 1987; O'Leary *et al.* 1992).

Human Collection and Harassment of Native Species. An increased human population increases the risk for the collection of and damage to special-status plant species.

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4.5.5.2.4 Impacts to Wildlife Movement and Habitat Connectivity

Subsection 4.5.5.2.3.4, Impacts to Common Wildlife, analyzed the direct, indirect, and secondary impacts of the proposed Project on general wildlife in the context of 14 wildlife guilds. The guild organization can also be used to discuss impacts to the relative abilities of the species in the different guilds to move through the landscape, and in particular through wildlife crossings, corridors, and linkages. Species in these guilds can then be discussed in the context Project impacts and of a post-development open space system. The guild organization used **Subsection 4.5.5.2.3.4** is slightly modified here to reflect issues related to wildlife movement through the landscape. For this reason, some of the guilds that were separated by habitat association or taxonomic group above are consolidated here because the habitat connectivity and movement considerations are similar. For the purpose of this analysis the wildlife guilds are consolidated as shown in **Table 4.5-52** with a cross-walk to the original 14 guilds. As noted in **Subsection 4.5.5.2.3.4**, assigning special-status species to guilds necessarily results in species generalizations in the context of the broader guild, and habitat requirements and potential impacts related to a particular species may not be applicable to the guild as a whole. **Subsection 4.5.3.3**, Impacts to Special Status Species provides more detailed species-specific analyses.

The impact analysis of wildlife movement and habitat connectivity provided in this subsection is divided into four elements:

1. Background information for each guild to provide the basis for the wildlife movement and habitat connectivity analysis (**Subsection 4.5.5.2.4.1**);
2. Impacts to landscape-scale habitat linkages resulting from Alternative 2 and a summary of the similarities and differences, if any, for Alternatives 3 through 7 (**Subsection 4.5.5.2.4.2**);
3. Impacts to wildlife corridors resulting from Alternative 2 and a summary of the similarities and differences, if any, for Alternatives 3 through 7 (**Subsection 4.5.5.2.4.3**); and
4. Impacts to wildlife crossings resulting from Alternative 2 and a summary of the similarities and differences, if any, for Alternatives 3 through 7 (**Subsection 4.5.5.2.4.4**).

The impact analysis of wildlife movement and habitat connectivity differs in format from the previous impact analyses where impacts were separately categorized as direct loss of habitat and direct impacts to individuals, indirect loss of habitat and indirect impacts to individuals, and secondary impacts. A more qualitative and holistic approach is applied to wildlife movement and habitat connectivity because impacts at the landscape scale, local corridor scale, and crossing scale area resulting from implementation of the RMDP and build-out of the Specific Plan, VCC,

and Entrada planning areas are interrelated and interactive. For example, the effectiveness of a culvert or bridge crossing for wildlife constructed as part of the RMDP will also depend on indirect effects of the build-out at that location. If Specific Plan build-out would constrain a particular wildlife corridor (*e.g.*, Exxon Canyon) and limit its use to coyotes, for example, analyzing a culvert in this constrained corridor in the context of mountain lion movement would irrelevant. For this reason, all impacts are discussed together in the context of the combined effects of the RMDP/SCP and build-out of the Specific Plan, VCC, and Entrada planning areas.

Table 4.5-52
Cross-Walk between Consolidated and Original Wildlife Guilds

Consolidated Wildlife Guilds	Original Wildlife Guilds
Aquatic	Mollusk Fish
Semi-Aquatic	Reptile and Amphibian – Semi-Aquatic
Mammal – High Mobility	Mammal – High Mobility
Mammal – Moderate Mobility	Mammal – Moderate Mobility
Low Mobility	Reptile – Low Mobility Mammal – Low Mobility
High Mobility Aerial	Bat Bird – Riparian Bird – Upland Woodland Bird – Upland Grassland Bird – Raptors Insect (Monarch Butterfly)[1]
Moderate Mobility Aerial	Bird – Upland Scrub and Chaparral Insect (San Emigdio Blue Butterfly)

[1] The Insect (Monarch Butterfly) was not part of the general wildlife guild analysis conducted in **Subsection 4.5.5.2.3.4**, but is included here because this special-status species has been observed on site.

4.5.5.2.4.1 *Habitat Connectivity and Wildlife Movement Background Information by Guild*

The background discussions for habitat connectivity and wildlife movement for each of the consolidated guilds are relatively brief and intended to provide the context for the impact analyses presented in the following subsections. A more complete discussion of these topics as applied to these guilds is provided in **Appendix 4.5** (*Newhall Ranch Resource Management and Development Plan: Wildlife Habitat Buffers and Connectivity White Paper* (Dudek 2008C))).

Aquatic Guild. The consolidated Aquatic guild includes the Mollusk (the undescribed snail in the Middle Canyon Spring) and Fish guilds described in **Subsection 4.5.5.2.3.4**. Species in the Aquatic guild are entirely dependent on aquatic environments for their life

histories and those present in the Santa Clara River system could travel throughout the River during periods of continuous flow or be transported during flood events to downstream areas. Native fish species such as Santa Ana sucker, unarmored threespine stickleback, and arroyo chub are adapted to surviving typical southern California stream cycles of winter storm floods and reduced summer flows. These native fish may persist in aquatic refugia of backwaters, ponds, and shallow streams during the summer dry months, and repopulate wider areas after winter floods. Additionally, artificially persistent flows such as from wastewater treatment plant or fish hatchery outflows may sustain populations of these native fish (Swift *et al.* 1993), although under artificial flow conditions they may be more susceptible to impacts by non-native fishes that are adapted to more consistent hydrological conditions. Flow conditions that emulate the natural cyclical conditions are probably most conducive to maintaining the native fish populations. Impacts that potentially disrupt natural flows may impede movement by these species in the Project area.

Semi-Aquatic Guild. The consolidated Semi-Aquatic guild is the same as the Reptile and Amphibian – Semi-Aquatic guild described in **Subsection 4.5.5.2.3.4**. The Semi-Aquatic guild species rely on aquatic environments for a portion of their life histories, and therefore their distributions are generally limited to areas in proximity to aquatic environment sources, including streams, rivers, ponds, reservoirs, and ephemeral wetlands (*e.g.*, vernal pools). While both the arroyo toad and southwestern pond turtle are capable of long dispersal movements through terrestrial habitat between suitable aquatic sites (66 FR 9413–9474; Holland 1994), within the Project area, instream movements along the Santa Clara River and its major tributaries are probably most important for these species. Any suitable aquatic habitats within the Project area and immediate region can be reached directly by moving along the River corridor. Furthermore, there are no suitable aquatic habitat areas (*i.e.*, major tributary drainages or streams) within their overland dispersal capabilities (at least up to 5.0 miles along streambeds for the arroyo toad (66 FR 9413–9474) and 3.0 miles overland for southwestern pond turtles (Holland 1994)) and that could not be reached by moving along the River corridor.

Mammal – High Mobility Guild. The consolidated Mammal – High Mobility guild is the same as the Mammal – High Mobility guild described in **Subsection 4.5.5.2.3.4**. These species have in common that their spatial activity (*i.e.*, home ranges, movements related to foraging, seeking mates, and dispersal) extends beyond the boundaries of the Project area and thus need to be addressed at a regional landscape level. Bobcat, coyote, mule deer, and likely mountain lion include all or portions of the undeveloped portions of the Project area as part of their home ranges. The black bear probably does not include the Project area within its normal home range in the region, but may pass through the

High Country SMA and Salt Creek area within the Project area during dispersal movements between higher elevation forested habitat north and south of the area. Habitat linkages and corridors that function for the mountain lion, mule deer, and black bear would also be adequate for the coyote and bobcat

The canyons and creeks within the High Country SMA and Salt Creek area provide natural conduits for movement between the Santa Susana Mountains and the Santa Clara River corridor after development, as illustrated by Salt Creek–High Country linkage No. 3, shown in **Figure 4.5-31**. Additionally, the South Coast Missing Linkages Project's linkage design shown in **Figure 4.5-22** overlaps with the Salt Creek–High Country linkage. Mountain lions in the Santa Ana Mountains of southern California, for example, preferentially move along canyon bottoms and gently sloping terrain rather than ridgelines and steep terrain and they prefer riparian vegetation for diurnal use and nocturnal travel (Dickson and Beier 2006; Dickson *et al.* 2005). The Salt Creek–High Country linkage is a natural feature expected to provide corridors of movement and dispersal along the natural northwest–southeast alignment of the canyons not only for mountain lion, but also the other Mammal – High Mobility guild species. The mule deer is expected to use the rugged terrain throughout the High Country SMA and Salt Creek area.

The Santa Clara River Corridor SMA serves as a major east–west linear linkage to canyons and hills along the length of the River and provides far-reaching linkages to larger open space area north and south of the River. This linkage provides a 1,000-foot-wide to 2,000-foot-wide swath of riverine habitat that probably can meet the life history needs of the bobcat, coyote, and mule deer, and many smaller and less mobile species, and function as dispersal habitat for the mountain lion and black bear

SR-126 is a significant existing barrier to north–south movement by Mammal – High Mobility species. Even for species that readily cross busy highways, such as coyotes, the high volume of existing and future traffic on SR-126 at all hours makes it a very dangerous at-grade crossing for wildlife. For the primary crossings of SR-126 in Ventura County, there are existing large arched culverts that serve ranch agricultural operations, as shown in **Figure 4.5-32**. These culverts measure about 4.4 meters (14 feet, 7 inches) in height, 7.5 meters (25 feet) in width, and 51.8 meters (170 feet) in length, resulting in an openness factor of 0.65, which well exceeds the openness factor of 0.25 found by Donaldson (2005) to be adequate for white-tailed deer, and are therefore large enough to accommodate black bear, mule deer, and mountain lion (see discussion of openness factor in **Subsection 4.5.3.4.7**). Also, in Banff National Park in Alberta, Canada, for example, black bears used underpasses that ranged in size from approximately 14 to 44 feet in width, eight to 13 feet in height, and 84 to 319 feet in length (Clevenger and

Waltho 2000). Beier (1995) observed mountain lions using box culverts less than 15 by 15 feet to cross under freeways. Ruediger and DiGiorgio (2007) recommend similar dimensions for black bear and mountain lion as well as mule deer (see **Table 4.5-22** in **Subsection 4.5.3.4.7**). The South Coast Missing Linkages Project acknowledged the value of the Ventura County crossings at Camulos Ranch and Tapo Canyon, as well as several smaller drainage culverts (where bobcat tracks were observed), and commented about the Tapo Canyon structures as follows (Penrod *et al.* 2006, p. 91):

> These structures should be maintained and enhanced during the next transportation improvement project. We strongly recommend maintaining the wild character of this branch of the linkage, one of the last remaining areas where natural habitats are still contiguous between the Santa Susana Mountains and the Sierra Madre Ranges.

Mammal – Moderate Mobility Guild. The consolidated Mammal – Moderate Mobility guild is the same as the Mammal – Moderate Mobility guild described in described in **Subsection 4.5.5.2.3.4**. These species are capable of dispersing wider than the Project area but typically have home ranges that could be wholly contained within the Project area. With the exception of the raccoon, which adapts well to urban settings, it is important to maintain sufficient habitat for these species that is buffered from urban-related impacts (see **Subsection 4.5.5.1** discussion of secondary impacts), as well as regional connectivity to larger conservation areas important for population dispersal.

Species in the Mammal – Moderate Mobility guild tend to require suitable habitat for movement and dispersal and are generally limited in their ability, and thus less apt, to traverse unsuitable habitat. However, raccoons are an exception, because, like coyotes, they can and often do use urban areas. For this reason, the discussion of connectivity is primarily focused on the badger, gray fox, black-tailed jackrabbit, and long-tailed weasel.

Badgers may be considered intermediate between highly mobile and moderately mobile species. While they are capable of long-distance dispersal (Messick and Hornocker (1981) documented a juvenile dispersal event of 68 miles), badgers may be relatively sedentary within home ranges where resources are plentiful. Various studies have documented badger home ranges varying from 400 to 600 acres (Messick and Hornocker 1981) and as high as 74,000 acres (RISC 2007). Their distribution in a landscape coincides with the availability of prey, burrowing sites, and mates, with males ranging wider than females during the breeding and summer months (Minta 1993). In general, badger activity within a home range tends to concentrate in areas with suitable soils for burrowing or colonies of ground squirrels.

Gray fox home ranges are also variable. In Wisconsin, home ranges varied from approximately 32 to 766 acres; in Florida, home ranges averaged 1,900 acres; in Utah, home ranges averaged 247 acres; and in Davis, California, the average home range for four females was 296 acres (Zeiner *et al.* 1990B).

Black-tailed jackrabbits are capable of dispersing long distances, but typical dispersal distances may be relatively short. French *et al.* (1965) recorded most dispersal distances at less than 0.25 mile, but 18% of juveniles dispersed greater distances and one individual dispersed 28 miles in 17 weeks. Most seasonal movements involve short distances and may be related to food availability (Bronson and Tiemeir 1959). Home ranges of the black-tailed jackrabbit are also variable, but typically range from 49 to 346 acres (Best 1996). French *et al.* (1965), however, recorded ranges of only 40 acres in southeastern Idaho, while Smith (1990), using radiotelemetry, estimated home ranges in northern Utah of 247 to 741 acres. Smith (1990) also found that jackrabbits tend to shift their home range over time, with the shifts occurring gradually.

Long-tailed weasels are known to occupy home ranges varying from approximately 25 to 640 acres, depending on the condition of habitat (Zeiner *et al.* 1990B). Gehring and Swihart (2004) monitored 11 long-tailed weasels in habitat fragmented by agriculture in Indiana and found that females occupied home ranges of 128 ± 20 acres and males occupied home ranges of 445.5 ± 149 acres. Male–male home ranges do not overlap. During the breeding season, male ranges increase in size to overlap those of more females. Increased road kill of males has been observed in western Washington during the breeding season, indicating higher levels of roaming in search of mates (Buchanan 1987).

Species in the Mammal – Moderate Mobility guild are expected to inhabit the River Corridor SMA, High Country SMA, and Salt Creek area, collectively totaling 6,700 acres. These areas combined are large enough to support from a few (*e.g.*, badgers and gray foxes) to many individuals (black-tailed jackrabbits and long-tailed weasels) in the moderate mobility guild. Animals in this guild will most likely disperse through the open space by diffusion of populations, but also occasionally through long-distance dispersal events (*e.g.*, badger and black-tailed jackrabbit), allowing gene flow between connected open space areas. The dispersal capabilities of the gray fox and long-tailed weasel are unknown, but it is expected that long-range dispersal events are possible, but would be relatively uncommon. Rare or occasional long distance dispersal events would be possible *via* the natural habitat linkages that these open space areas provide. Canyons and creeks within the High Country SMA and Salt Creek area provide natural conduits for movement, particularly because the species in this guild are associated with shrublands, riparian, and wash environments. The low biological energy cost of

movement provided for by the canyons (*i.e.,* gentle terrain, good cover) makes these primary pathways for movement and dispersal. The River Corridor SMA will serve as the major linkage to canyons and hills along the length of the River and will provide a regional linkage to larger open space areas for species in this guild. The direct connection of the High Country SMA and Salt Creek area with the River Corridor SMA provides an important cross-linkage for this guild for moving from the higher elevations to and through the River corridor.

The main constraint on north–south movement of species in the Mammal – Moderate Mobility guild in the Project area and to adjacent open space areas is SR-126. As described above for the Mammal – High Mobility guild species, however, there are existing arched culverts that serve ranch agricultural operations, as depicted in **Figure 4.5-32**. Because, as described above for Mammal – High Mobility guild species, these culverts are large enough to accommodate black bear, mule deer, and mountain lion, they will be more than adequate for the smaller, moderate mobility guild species. The South Coast Missing Linkages Project (Penrod *et al.* 2006) also noted several smaller drainage culverts (where bobcat tracks were observed) and indicated that these smaller culverts are the best connection for species such as the badger. Similarly, Ruediger and DiGiorgio (2007) indicated that round and box culverts with dimensions of 36 inches are suitable for badger and weasel (see **Table 4.5-22** in **Subsection 4.5.3.4.7**). With these existing culverts, along with new culverts and bridges associated with improvements and new roads, connectivity for Mammal – Moderate Mobility guild species will be maintained.

Low Mobility Guild. The consolidated Low Mobility guild includes the Mammal – Low Mobility and Reptile – Low Mobility guilds described in **Subsection 4.5.5.2.3.4**. Low Mobility guild species are relatively sedentary (*i.e.,* have relatively small home ranges and limited dispersal capabilities) throughout their life cycle and depend almost continuously on available suitable habitat that meets virtually all of their life history needs. For instance, Bleich and Schwartz (1975) estimated desert woodrat (*Neotoma lepida*) male and female home ranges in northern San Diego County at 0.09 acre and 0.11 acre, respectively. Frank and Heske (1992) used radiotelemetry to study spatial patterns of southern grasshopper mouse in the Chihuahuan Desert of southeastern Arizona and estimated average home ranges of breeding males at 9.1 acres versus 4.2 acres for females. No specific dispersal data are available for the grasshopper mouse, but Stapp (1997) reported that most juveniles had disappeared from their study site by autumn. Some spatial data are available for special-status reptiles that occur in the Project area. Radiotelemetry of several dozen coast horned lizards in southern California locations over a five-year period documented annual home range sizes of approximately 3.0 to 3.5 acres, with the likelihood that, across years, home range areas could be larger (Suarez,

pers. comm. 2005). Anderson (1993) reported coastal western whiptail home ranges in California of 2.5 acres for males and 0.8 acre for females. Diffendorfer *et al.* (2005) studied movements by the rosy boa at four sites in San Diego and Riverside counties for up to four years. Movement (measured as estimated distance moved per day) by the rosy boa was characterized by frequent short distant movements and rare long distance movement events that primarily occurred in the spring. Short-distance movements per day were predominantly less than 33 feet per day. Rosy boa home ranges were relatively small, with a largest recorded home range of 3.7 acres after four years of cumulative data. Fitch (1975) found that ringneck snakes could still be located after a number of years within 33 feet of their initial capture point, indicating strong site tenacity. Some ranges for ringneck snakes in Kansas tended to be elongated, with maximum axes of 460 feet (Fitch 1975). In areas with large seasonal temperature fluctuations, there appears to be some seasonal movement between habitats, with average movements between summer habitats and hibernacula of approximately 394 feet (Fitch 1975; Parker and Brown 1974).

Species in the Low Mobility guild may be capable of inhabiting confined open areas such as drainages, narrow canyons, and even edge environments that would otherwise restrict larger wildlife as long as suitable habitat is available. Additionally, species in this guild are usually incapable of traversing unsuitable habitat or have difficulty doing so because certain elements of the landscape mosaic pose physical or behavioral barriers to their movement (*e.g.*, roads, vertical barriers such as fences, walls, curbs, large open spaces) and these species are not agile enough to overcome these barriers.

Because species in the Low Mobility guild generally have small home ranges and limited dispersal capabilities, they typically do not cross large open spaces or unsuitable habitat. Furthermore, movement across a large landscape containing suitable habitat is more likely to occur by diffusion over generations rather than by discrete, long distance movements between disjunct habitat patches by an individual (*i.e.*, jump dispersal). For this reason, suitable continuous habitat is considered necessary to maintain connections between local populations and provide for dispersal and genetic exchange. This guild is less likely to exhibit metapopulation dynamics characterized by local extirpation and colonization by relatively mobile species; if an isolated habitat patch loses a species in this guild, it is unlikely to be recolonized. Because these species have low mobility and require continuous suitable habitat, they are also susceptible to edge effects at the open space–urban interface along habitat connections and corridors, as described in **Subsection 4.5.5.1**. As a result, narrow, long wildlife corridors that may adequately function for quickly moving Mammal – High Mobility, and even Mammal – Moderate Mobility guild species, are likely to be less effective for Low Mobility guild species. Ideally, the "interior habitat" (*i.e.*, habitat relatively unaffected by edge effects) in the linkage should be large enough to contain a typical home range of the species. For a

hypothetical species with a circular home range of two acres, the interior habitat would have to be approximately 330 feet wide (*i.e.*, the diameter of the circle). Assuming that edge effects penetrate 200 feet into open space from the open space–urban edge, for the interior habitat to be relatively free of edge effects, the total width of a habitat linkage bound on both sides by development would have to be 730 feet.[1] For a desert woodrat with a typical home range of 0.11 acre (assuming a circular range), the interior habitat would have to be approximately 78 feet wide and habitat linkage would have to be 478 feet wide to avoid edge effects.

As with the Mammal – High Mobility and Mammal – Moderate Mobility guild species, SR-126 is probably the main existing constraint for north–south population diffusion of species in the Low Mobility guild. Movement mostly will be limited to areas with existing and future culverts under the highway. For most of the species, the culverts themselves probably would not be suitable habitat, and thus individuals would have to quickly move through them to gain access to suitable habitat north and south of the highway. Use of these culverts, however, will be species-specific, with some species likely using the culverts at a relatively high frequency and others at a low frequency or not at all. However, the habitat areas that will be preserved in open space, particularly south of the SR-126, will be large enough to support viable populations of the Low Mobility guild species even without exchange of individuals and genetic material across SR-126.

High Mobility Aerial Guild. The consolidated High Mobility Aerial guild includes the Bat guild and all the bird guilds except Bird – Upland Scrub and Chaparral, as described in **Subsection 4.5.5.2.3.4**. For the purpose of this discussion, it also includes one insect: the migratory monarch butterfly. The High Mobility Aerial guild is comprised of species capable of long-distance flight. These species may utilize one or more habitats within the Project area for certain life history requirement such as nesting, roosting, foraging, or overwintering. The key assumption for the High Mobility Aerial guild species is that their movement in the Project area would not be highly constrained by local landscape conditions such as unsuitable habitat, urban development, or roads as long as there are suitable habitat patches that meet their life history requirements.

Moderate Mobility Aerial Guild. The consolidated Moderate Mobility Aerial guild is the same as the Bird – Upland Scrub and Chaparral guild, as described in **Subsection 4.5.5.2.3.4**. Although some of the bird species in this guild are migrants and

[1] In reality, most species have irregularly shaped home ranges related to a number of factors, such as microhabitats and the distribution of resources within the home range and the location of other individuals.

may be highly mobile, most of the resident species are relatively sedentary and typically do not disperse long distances. For the purpose of this discussion, this guild also includes butterflies with moderate mobility such as the San Emigdio blue butterfly. Moderate Mobility Aerial guild species are typically year-round residents, and a relatively small geographic area may meet all their life history needs. Dispersal by Moderate Mobility Aerial guild species usually occurs through diffusion across the landscape over generations (*e.g.*, moving to available territories adjacent or in close proximity to their natal territory), where flight allows saltatorial or jump-dispersal movements between disjunct habitat patches. Dispersal events, however, may occasionally occur across relatively long distances and unsuitable habitat. The California gnatcatcher, for example, had mean dispersal distances of 0.65 mile in Orange County (Galvin 1998) and 1.7 to 2.0 miles for males and females, respectively, on the Palos Verdes Peninsula in Los Angeles County (Atwood *et al.* 1996). However, Galvin (1998) recorded one dispersal event of 4.7 miles and Bailey and Mock (1998) suggest that gnatcatcher dispersal capability is underestimated based on the ability of the species to traverse highly modified landscapes at least for short distances. Bailey and Mock (1998) observed juvenile dispersal distances averaging less than 1.9 miles from the nest territory; however, the longest recorded juvenile dispersal averaged 9.9 miles (Mock 2004). Post-breeding season observations of the California gnatcatcher occurred in the Project area in October 2007 (Priest 2007A) and August 2008 (Ortega 2008), indicating that the site is used during dispersal even though there is no evidence of a breeding population on site (see California gnatcatcher account in **Subsection 4.5.5.3**), and the nearest other documented California gnatcatcher location is Chivas Canyon location, 3.6 miles southwest of the Project area.

Species in the Moderate Mobility Aerial guild can meet their entire life history needs within habitat wholly contained within the Project area and constitute subpopulations or portions of larger populations. However, the habitat requirements of the species in this guild are variable and species-specific. For example, four-wing saltbush (*Atriplex canescens*) is the primary host plant for the San Emigdio blue butterfly, and although this saltbush is widespread throughout the western United States, the distribution of the San Emigdio blue butterfly is much more localized, suggesting that other factors may determine habitat suitability (Murphy 1990), and thus restrict it to certain locations. On site, the San Emigdio blue butterfly is associated with quail brush (*A. lentiformis*). Rufous-crowned sparrow occupies moderate to steep hillsides that are rocky, grassy, or covered by coastal scrub or chaparral. This species appears to be relatively sedentary and has home ranges averaging approximately 3.7 acres, with average territories (*i.e.*, defended area) of approximately 2.0 acres (Zeiner *et al.* 1990A). The California gnatcatcher's territory size varies and is influenced by season and locale (Preston *et al.* 1998), but may be unrelated to vegetation structure (Braden *et al.* 1997). During the breeding season, territories in coastal areas are often smaller, averaging 5.7 acres

(Atwood, Tsai *et al.* 1998), than those in more inland regions, which average 8.4 acres (Braden *et al.* 1997). Territories for Bell's sage sparrow that use coastal scrub and chaparral communities in San Diego and Riverside counties varied from 1.9 to 14.1 acres (County of Riverside 2008). Territories for the black-chinned sparrow, which primarily occurs in chaparral, have been documented at 3.9 to 9.9 acres per pair (Tenney 1997).

Because species in this guild have moderate mobility, as long as there is adequate habitat connectivity (*i.e.*, suitable habitat patches that are within the flight capabilities of individuals) they may exhibit metapopulation dynamics characterized by local extirpation and recolonization. Habitat patches that are too isolated for recolonization (*i.e.*, beyond the flight capability of the species) may permanently lose species in this guild.

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4.5.5.2.4.2 *Impacts to Wildlife Landscape Habitat Linkages*

To provide the context for the potential Project impacts to wildlife landscape habitat linkages, **Figure 4.5-22** shows the conceptual regional open space connectivity identified by Penrod *et al.* (2006) that would provide for landscape-scale habitat connectivity between the Santa Susana Mountains to the south and the Los Padres National Forest to the north. These conceptual linkages encompass the High Country SMA, Salt Creek area within the Project area, and the Santa Clara River west of the Project area. Penrod *et al.* (2006) considered the High Country SMA and Salt Creek area, along with regional open space conservation areas and initiatives such as "SOAR,"[1] in recommending a linkage design that would connect the Santa Monica Mountains, San Gabriel Mountains, and the Sierra Madre Mountains. This linkage design was also based on a "least cost analysis" that quantitatively models the most efficient routes target animals could take to travel between these open space areas. The least cost analysis incorporates available information for movement-limiting variables such as elevation, vegetation, topography, and road density. The "least cost path" is the most direct or optimum route utilizing suitable habitat and minimizing costs (*e.g.*, energy costs, risk of mortality), but does not represent all potential routes available to a species that may be more costly, but feasible, alternatives. Dispersing animals are often young adults, and behaviorally these animals may take routes that do not ensure the least cost or the highest rate of survivability or they may be inhibited from using such routes by adults. However, these least cost analyses quantitatively identify idealized linkages and corridors that would allow for the most efficient long-range dispersal and migration movement for wildlife between larger conservation areas.

The High Country SMA and Salt Creek area within the Project area comprise an important part of the least cost path linkage design identified by Penrod *et al.* (2006) (**Figure 4.5-22**). They provide a key part of the east–west linkage that crosses I-5 and connects to the Angeles National Forest in the San Gabriel Mountains to the east and Ventura County SOAR open space to the southwest. They also provide a significant part of the north–south linkage between the Santa Susana Mountains and the "Fillmore Greenbelt" to the northwest that further links to the Los Padres National Forest and the Angeles National Forest to the north.

As described in **Subsection 4.5.5.2.4.1**, most of the species in the upland habitat guilds, including Mammal – High Mobility, Mammal – Moderate Mobility, Low Mobility, and Moderate Mobility Aerial, are probably using all or much of the undeveloped upland portions of the Project area, although some species, such as mountain lion, mule deer, bobcat, coyote, and badger, may favor certain features, such as canyons, washes, ridgelines, dirt roads, and established game trails for movement. Other more sedentary species in the Low Mobility guild are more likely to be distributed throughout the Project area in suitable habitat.

[1] Save Open-Space and Agricultural Resources (SOAR) is a non-profit organization which seeks to maintain agricultural, open space, and rural lands within Ventura County and surrounding regions. Development activities within the SOAR boundaries are limited by County Ordinance.

Alternative 2

Implementation of the proposed Project will constrain the movement of wildlife in the Project area. However, as shown in **Figure 4.5-40**, the landscape habitat linkages that will remain functional after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2 are the High Country SMA, Salt Creek area, and River Corridor SMA. These contiguous areas are required open space elements of the proposed Project and combined total approximately 6,700 acres and provide both internal connectivity and connections to habitat areas beyond the Project area, as discussed above.

The Santa Clara River is a critical habitat linkage in the Project area because it provides significant north–south and east–west habitat connectivity as well as resident habitat for many wildlife species. The River corridor connects downstream and upstream areas, including tributary drainages, such as Salt Creek and Castaic Creek, that allow wildlife access to uplands from the River. Although the RMDP includes the construction of bridges and bank stabilization within the Santa Clara River corridor, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue; post-development widths of the River floodplain would range from about 1,000 feet wide to 2,000 feet wide. As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected. Therefore, habitat connectivity in the River corridor for the Aquatic and Semi-Aquatic guild species would not be substantially affected. Likewise, any other species using the River corridor for movement or habitat connectivity would not be substantially affected, including the Mammal – High Mobility, Mammal – Moderate Mobility, Low Mobility, and Moderate Mobility Aerial guild species. Habitat connectivity along the River corridor for movement by the High Mobility Aerial guild is not an issue because of the ability of species in this guild to fly between disjunct habitat patches.

The combined High Country SMA and Salt Creek area provide a direct connection between the River corridor and large upland habitat areas south of the River (**Figure 4.5-22**). As noted above, the least cost analyses conducted by Penrod *et al.* (2006) identified these areas as important components of regional habitat connectivity.

As shown in **Figure 4.5-22**, the High Country SMA and Salt Creek area are part of the eastern arm of the conceptual linkage design identified by Penrod *et al.* (2006). Based on the Impact Sciences, Inc. (2005) mammal study and incidental observations by Dudek (2006B) in the High Country SMA and Salt Creek area, wildlife have been observed utilizing these areas despite ongoing agricultural and grazing activities. The most direct route for wildlife to move from the River corridor to upland areas south of the River is through the Salt Creek Confluence corridor.

Development of Potrero Village will impact the eastern edge of the conceptual linkage identified by Penrod *et al.* (2006) (**Figure 4.5-22**) and will limit the future use of this area by wildlife. However, the combined 5,220-acre High Country SMA and Salt Creek area is large enough to provide both buffer and core habitat to allow wildlife to use this landscape linkage without necessarily having to come into close contact with urban development, except at highway crossings discussed below in **Subsection 4.5.5.2.4.4**. The conceptual linkage identified by Penrod *et al.* (2006) in this area is about 4.5 miles (23,760 feet) wide, with the narrowest portion of the High Country SMA and Salt Creek area approximately 4,000 feet wide (**Figure 4.5-22**). This minimum 4,000-foot-wide zone will provide adequate buffer and core habitat for the Mammal – High Mobility guild species. This habitat linkage will remain fully intact after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, and is expected to function as it has in the past. Wildlife guilds expected to use the High Country SMA and Salt Creek area, in addition to the Mammal – High Mobility guild, include some of the Semi-Aquatic guild species (*e.g.*, southwestern pond turtle and two-striped garter snake), and the Mammal – Moderate Mobility, Low Mobility, and Moderate Mobility Aerial guilds. Many species in the High Mobility Aerial guild are also expected to use the High Country SMA and Salt Creek area, but habitat contiguity to support their movement is not an issue because of their ability to fly between suitable habitat patches. The High Country SMA and Salt Creek area generally do not support aquatic habitat suitable for the Aquatic guild species.

The Castaic/Hasley corridor will also remain intact as an Open Space/Open Area following implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, but with a narrowing of the corridor that passes between the VCC and Entrada project areas (**Figure 4.5-40**). This corridor was not included by Penrod *et al.* (2006) as a regional linkage, but with its direct connection to the Santa Clara River corridor, it will still allow for movement of many species, including Mammal – High Mobility species such as coyote, mule deer, and possibly mountain lion and bobcat, and could function as live-in and movement habitat for species in the other guilds, although aquatic habitat for fish is limited to periods when Castaic Creek is flowing (ENTRIX 2006B). Although the vicinity of Castaic Creek north of the Project area is becoming increasingly developed, it will continue to have connectivity value

between the Santa Clara River and upland habitats to the northeast of the Project area extending to Castaic Lake and the Angeles National Forest, as illustrated in **Figure 4.5-22**.

Other existing habitat linkages on site, such as Potrero Canyon and Long Canyon south of the River corridor, and San Martinez Grande Canyon and Chiquito Canyon north of the River, will be constrained by build-out of the Specific Plan area and will lose some of their habitat function, although they will have some value as wildlife corridors in the Project area, as discussed below in **Subsection 4.5.5.2.4.3**.

Significance Finding for Impacts to Wildlife Landscape Habitat Linkages: Adverse but not significant for Alternative 2. The consideration of impacts to wildlife landscape habitat linkages falls under the following significance criteria as previously identified in **Subsection 4.5.4**: (4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; and (7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

As discussed above, the River Corridor SMA is a critical habitat linkage in the Project area. The combined High Country SMA and Salt Creek area provide the most direct connections between the River corridor habitat and large upland habitat areas south of the River, and are those identified by Penrod *et al.* (2006) as important components of regional habitat connectivity. These habitat linkages will remain intact and functional after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2

The Castaic/Hasley corridor will also remain intact as Open Space/Open Area following implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, allowing for movement of many Mammal – High Mobility species such as coyote, mule deer, and possibly mountain lion and bobcat, and will function as live-in habitat and movement habitat for the other species guilds. The Castaic/Hasley corridor will continue to have connectivity value between the Santa Clara River and upland habitats to the northeast of the Project area extending to Castaic Lake and the Angeles National Forest.

Other existing habitat areas that currently function as linkage habitat in the undeveloped landscape and that may currently be used by wildlife for north–south movement between the Santa Susana Mountains to the south and the Los Padres National Forest to the north will be constrained by build-out of the Specific Plan area. Prominent canyons that

probably currently provide this function include Potrero Canyon and Long Canyon south of the River corridor and Chiquito Canyon and San Martinez Grande Canyon north of the River (**Figure 4.5-40**). The loss of wildlife landscape habitat linkage function within these canyons on site due to build-out, however, would not meet the significance criteria listed above because of the alternative regional landscape habitat linkages that will remain intact and fully functional. Species currently using these other areas may be displaced as a result of Specific Plan build-out, but the landscape-scale habitat connections for regional wildlife movement would not be substantially affected.

Implementation of Alternative 2 would result in adverse, but not significant impacts to wildlife landscape habitat linkages.

Alternative 3

As depicted in **Figure 4.5-41**, implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 3 would result in similar impacts to wildlife landscape habitat linkages compared to Alternative 2.

Implementation of Alternative 3 would result in adverse but not significant impacts to wildlife landscape habitat linkages.

Alternative 4

As depicted in **Figure 4.5-42**, implementation of the RMDP and SCP and build-out of the Specific Plan and Entrada planning areas under Alternative 4 would result in similar impacts to wildlife landscape habitat linkages compared to Alternative 2, with the exception of the Castaic/Hasley Corridor, which will not be impacted under Alternative 4 because VCC would not be constructed.

Implementation of Alternative 4 would result in adverse but not significant impacts to wildlife landscape habitat linkages.

Alternative 5

As depicted in **Figure 4.5-43**, implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 5 would result in similar impacts to wildlife landscape habitat linkages compared to Alternative 2, with the exception of the Castaic/Hasley Corridor, which will not be impacted under Alternative 5 because VCC would not be constructed.

Implementation of Alternative 5 would result in adverse but not significant impacts to wildlife landscape habitat linkages.

Alternative 6

As depicted in **Figure 4.5-44**, implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 6 would result in similar impacts to wildlife landscape habitat linkages compared to Alternative 2, with the exception of the Castaic/Hasley Corridor, which will not be impacted under Alternative 6 because VCC would not be constructed

Implementation of Alternative 6 would result in adverse but not significant impacts to wildlife landscape habitat linkages.

Alternative 7

As depicted in **Figure 4.5-45**, implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 7 would result in similar impacts to wildlife landscape habitat linkages compared to Alternative 2, with the exception of the Castaic/Hasley Corridor, which will not be impacted under Alternative 7 because VCC would not be constructed.

Implementation of Alternative 7 would result in adverse but not significant impacts to wildlife landscape habitat linkages.

4.5.5.2.4.3 *Impacts to Wildlife Corridors*

The High Country SMA, Salt Creek area, and River Corridor SMA are the foundation for post-development dispersal and movement across the regional landscape by the different species guilds, as discussed above in **Subsection 4.5.5.2.4.2**. This subsection addresses local habitat connectivity and wildlife movement within the immediate Project area after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas.

As described above in **Subsection 4.5.3.4.7**, wildlife corridors within the Project area were identified primarily by using existing scent station/track station data (Impact Sciences 2005), topographic analysis, incidental field observations (Dudek 2006B), and professional judgments based on known habitat associations of wildlife species in the Project area. The Impact Sciences (2005) scent/track stations were located throughout the Specific Plan area, including along Salt Creek Canyon from the eastern portion toward the Ventura County line, north above Potrero Mesa, throughout Long Canyon and around the agriculture field north of Long Canyon, south of Lion Canyon and Grapevine Mesa, dispersed throughout Exxon Canyon and Middle Canyon, and in a few portions of Chiquito Canyon, San Martinez Grande Canyon, and Entrada. Impact Sciences, Inc. (2005) also conducted nighttime spotlight surveys along roadways throughout the Project area five nights a week between July 28 and September 30, 2004. The Dudek (2006B) general wildlife study focused on the Salt Creek area and High Country SMA and included meandering transects throughout the canyons and ridgelines in these areas and identification of wildlife by direct observation, calls, and other signs, such as tracks and scat.

In an undeveloped landscape, high and moderate mobility wildlife (including birds and mammals) can be expected to travel relatively freely throughout an area because there are no significant obstacles to movement. However, some species prefer certain habitat types related to vegetation cover and topography, such as mule deer preferring rugged terrain and slopes that allow them to escape from predators (Lingle 2002; Pierce *et al.* 2004) and mountain lions preferring canyon bottoms and gently sloping terrain (Dickson and Beier 2006; Dickson *et al.* 2005). Therefore, with the understanding that an open landscape allows wildlife to range freely, areas that exhibit the characteristics of wildlife corridors with the RMDP Alternative 2 build-out scenario (*i.e.*, linear landscape elements that connect larger habitat patches) were included in this corridor analysis. Corridors were identified that would allow Mammal – High Mobility guild species to move through areas in a single generation and would contain sufficient habitat components for permanent occupation by Mammal – Moderate Mobility, Low Mobility, and Moderate Mobility Aerial guild species. These less mobile guild species that are unlikely or unable to move through a corridor in a lifetime require sufficient habitat to allow diffusion of the species over more than one generation (intergenerational) through the area. High Mobility Aerial species were not considered in this analysis because of their ability to fly between disjunct habitat patches and their relative independence of wildlife corridors.

Thirteen potential corridors within the Project area were identified in this analysis (**Figure 4.5-31**):

1. Santa Clara River Corridor
2. Salt Creek Confluence
3. Salt Creek–High Country
4. East Fork Salt Creek
5. Potrero Canyon–Salt Creek
6. Potrero Canyon
7. Long Canyon
8. Short Canyons–River Corridor
    a. Humble Canyon
    b. Lion Canyon
    c. Exxon Canyon
    d. Dead End Canyon
    e. Middle Canyon
    f. Magic Mountain Canyon
9. Chiquito Canyon
10. San Martinez Grande Canyon
11. Off-Haul Canyon
12. Homestead Canyon
13. Castaic/Hasley Corridor.

The Santa Clara River, Castaic/Hasley, Salt Creek Confluence, Salt Creek–High Country, and East Fork Salt Creek corridors were discussed above in **Subsection 4.5.5.2.4.2** in the context of their pre- and post-development function as landscape-level habitat linkages that provide both permanent resident and movement habitat for the various wildlife species guilds.

Alternative 2

As shown in **Figure 4.5-40**, a number of the potential wildlife corridors would be developed, would become dead-ends, or would be highly constrained for wildlife after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2. Corridors No. 8d: Dead End Canyon; No. 8e: Middle Canyon; No. 8f: Magic Mountain Canyon; and No. 11: Off-Haul Canyon would be developed and eliminated as wildlife corridors. Corridors No. 8a: Humble Canyon; No. 8b: Lion Canyon; and No. 8c: Exxon Canyon would become dead-ends. The canyons that would become dead-ends may still provide suitable habitat for some of the species in the Mammal – High Mobility, Mammal – Moderate Mobility, Low Mobility, Moderate Mobility Aerial, High Mobility Aerial, and Semi-Aquatic guilds (*e.g.*, terrestrial habitat for southwestern pond turtle), but these dead-ends would not

allow for movement or dispersal between large habitat areas. These dead-ends, which are tributaries to the Santa Clara River, do not support Aquatic guild species.

The potential wildlife corridors that would remain fully functional after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2 area are No. 1: Santa Clara River Corridor; No. 2: Salt Creek Confluence; No. 3: Salt Creek–High Country; and No. 4: East Fork Salt Creek. These corridors will provide habitat connections among the protected open space areas—High Country SMA, Salt Creek area, and River Corridor SMA—and will provide connections to habitat areas beyond the Project area, as discussed above in **Subsection 4.5.5.2.4.2**, in the context of the regional landscape-level habitat connections. Corridor No. 13: Castaic/Hasley would also remain functional, but would be somewhat constrained by VCC, as discussed above in **Subsection 4.5.5.2.4.2**.

Corridors No. 5: Potrero Canyon–Salt Creek; No. 6: Potrero Canyon; No. 7: Long Canyon; No. 9: Chiquito Canyon; No. 10: San Martinez Grande Canyon; and No. 12: Homestead Canyon would become constrained wildlife corridors due to surrounding development.

In addition to the proposed adjacent development, corridors No. 6: Potrero Canyon; No. 7: Long Canyon; No. 9: Chiquito Canyon; and No. 10: San Martinez Grande Canyon would be further constricted by the installation of culverts for proposed road crossings.

- Potrero Canyon would have five road crossing culverts;
- Long Canyon would have three road crossing culverts;
- Chiquito Canyon would have three road crossing culverts, and the existing triple box culvert under SR-126 would be replaced with a bridge crossing for the SR-126 and westbound and eastbound on-ramps. A trail bridge would be constructed over the creek about 50 feet south of SR-126.
- San Martinez Grande Canyon would have two road crossing culverts and a trail bridge constructed over the creek about 50 feet south of SR-126 (existing culvert under SR-126 would be remain at the existing 87 feet).

Table 4.5-53 describes the culvert/bridge type and size dimensions for the proposed road crossings, along with their openness factors (see discussion of openness factor in **Subsection 4.5.3.4.7**).

Table 4.5-53
Summary of Proposed Road Crossing Culverts/Bridges in Constrained Wildlife Corridors

Crossing	Crossing Type[1]	Height (ft)	Width (ft)	Length (ft)	Openness Factor[2]	Adequate for Mule Deer Passage[3]
Potrero 1	Triple Box Culvert	10	12	100	0.37	Yes
Potrero 2	Double Box Culvert	10	12	100	0.37	Yes
Potrero 3	Double Box Culvert	10	12	100	0.37	Yes
Potrero 4	Double Box Culvert	10	12	100	0.37	Yes
Potrero 5	Double Box Culvert	10	12	100	0.37	Yes
Long 1	Double Box Culvert	12	15	140	0.39	Yes
Long 2	Double Box Culvert	12	15	320	0.17	No
Long 3	Double Box Culvert	12	12	440	0.10	No
Chiquito 1	Double Box Culvert	10	12	120	0.30	Yes
Chiquito 2	Double Box Culvert	10	12	70	0.52	Yes
Chiquito 3	Double Box Culvert	10	12	60	0.61	Yes
Chiquito 4	Main Line Bridge over SR-126 (replaces existing triple box culvert)	10	100 (maximum)	180	1.69	Yes
	Westbound On-ramp	10	100 (maximum)	70	4.35	Yes
	Eastbound On-ramp	10	100 (maximum)	40	7.62	Yes
	Pedestrian Bridge	10 to 15	90	85	3.23 to 4.84	Yes
San Martinez 1	Double Box Culvert	10	12	150	0.24	Yes
San Martinez 2	Double Box Culvert	10	12	64	0.57	Yes
San Martinez 3	Trail Bridge	8	90	12	18.29	Yes
	Existing Bridge Over SR-126	10 to 15	90	85	3.23 to 4.84	Yes

[1] The dimensions for the box culverts are for each box separately; *i.e.*, for Potrero 1 each section of the triple box culvert would be 10 feet x 12 feet x 100 feet.

[2] Openness factor = (height (meters) x width (meters)) / length (meters)

[3] The standard for mule deer passage is an openness factor of 0.25 based on Donaldson (2005). Because the mule deer are considered to be the species in the Project area most sensitive to the size dimensions of culverts, this species serves as a surrogate for analyzing the effectiveness of a culvert for conveying wildlife movement.

[4] Because the openness factor is a relatively non-precise value and effectiveness of a crossing also depends on other factors such as vegetation cover, topography, *etc.*, the value of 0.24 for San Martinez 1 is close enough to the 0.25 standard to be considered a functional crossing for mule deer.

Table 4.5-53 shows, based on the openness factor calculations, that most of the proposed crossings would be adequate for mule deer, likely the species most sensitive to the size dimensions of the culverts. Only two culverts (Long Canyon 2 and 3) would clearly be too constrained for mule deer. San Martinez 1, with an openness factor of 0.24, is

considered to be adequate, but is slightly more constrained than the standard of 0.25 (Donaldson 2005).

Constraints on these potential corridors as a result of adjacent development and culverts in the drainages will have variable effects on wildlife in the different guilds. Mammal – High Mobility guild species, such as mountain lion and American black bear, are not expected to regularly use these constrained corridors after build-out of the Specific Plan because of the general effects of urban development, although an occasional individual may wander into these areas. Because of the adjacent development, any mountain lions or black bears that do wander into these areas would be at a high risk of negative interactions with humans or vehicle collisions. Other Mammal – High Mobility guild species, such as mule deer, coyote, and bobcat, would be more likely to use these constrained corridors for movement, especially in areas with some vegetative cover, because they are less sensitive to urban development. While most of the culverts in these corridors under Alternative 2 are expected to function for these species, the two culverts in Long Canyon may be a barrier to mule deer and may result in blockage of movement in these areas or increased risk of vehicle collisions. Mammal – Moderate Mobility guild species are also likely to use the constrained corridors and would not be constrained by culverts under Alternative 2. Risk of vehicle collisions for Mammal – Moderate Mobility guild species, such as badger, however, would increase because individuals may wander onto or try to cross roads. The ringtail is not expected to use these constrained linkages, due to a lack of habitat and proximity to urban development. Low Mobility, Moderate Mobility Aerial, and some Semi-Aquatic guild species would also be likely to use these corridors as resident habitat where there is sufficient habitat (such as San Diego desert woodrat or some resident passerines with small home ranges/territories, such as rufous-crowned sparrow). The Low Mobility and Semi-Aquatic guild species should be able to disperse along these corridors through culverts. The Moderate Mobility Aerial guild species may be inhibited from moving through these corridors where there are small culverts. The High Mobility Aerial guild species may use suitable habitat in these corridors, and their movement would not be constrained because of their ability to fly between disjunct habitat patches. These constrained corridors do not provide suitable habitat for Aquatic guild species.

In addition to physical constraints on movement, these constrained corridors will introduce secondary effects that make them less suitable for wildlife, including increased lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. Lighting affects the behavior of many species. Species that are typically diurnal (*e.g.*, many birds) may be stressed by lighting and have their behavioral patterns and circadian cycles altered. Lighting may also increase predation due to making prey more detectable to nocturnal predators. Nocturnal species may avoid lighted areas, thus spatially and temporally altering their movement patterns.

Noise related to traffic and other activities (*e.g.*, active recreation) may also induce stress, alter behavior, and potentially mask the noise made by predators, thus increasing predation rates. Increased human activity may generally alter behavior patterns, induce stress, and increase the chance of negative encounters. Pet, stray, and feral cats and dogs, as well as mesopredators where coyotes become less common, would increase predation rates on native birds and rodents. Invasive plant species would degrade native habitat and cover for species moving through built-out areas of the Project. Argentine ants would be attracted to areas with increased moisture, disrupting predator–prey relationships due to displacement of native invertebrates, and potentially preying on nestlings.

Although some wildlife species will move through these constrained corridors and others may permanently occupy portions of these corridors where there is adequate habitat, in general, these constrained corridors are not considered to effectively contribute to long-term habitat connectivity function in the Project area.

Significance Finding for Impacts to Wildlife Corridors: Significant absent mitigation for Alternative 2. The consideration of impacts to wildlife corridors falls under the following significance criteria as previously identified in **Subsection 4.5.4**: (4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; and (7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

As discussed above, the following wildlife corridors that would remain fully functional after implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas are: No. 1: Santa Clara River Corridor; No. 2: Salt Creek Confluence; No. 3: Salt Creek–High Country; No. 4: East Fork Salt Creek; and No. 13: Castaic/Hasley Corridor. These corridors will provide habitat connections among the protected open space areas—High Country SMA, Salt Creek area, and River Corridor SMA—and will provide connections to habitat areas beyond the Project area. As discussed above, these wildlife corridors are expected to provide resident and movement habitat for the all of the consolidated wildlife guilds listed in **Table 4.5-53**. The exception is the Aquatic Mollusk guild that includes the undescribed snail that is only known to occur in Middle Canyon Spring and is not expected to occur in these corridors.

Under Alternative 2, corridors No. 5: Potrero Canyon–Salt Creek; No. 6: Potrero Canyon; No. 7: Long Canyon; No. 9: Chiquito Canyon; No. 10: San Martinez Grande Canyon;

and No. 12: Homestead Canyon would become constrained wildlife corridors due to surrounding development. In addition to the proposed adjacent development, No. 6: Potrero Canyon; No. 7: Long Canyon; No. 9: Chiquito Canyon; and No. 10: San Martinez Grande Canyon would be further constricted by the installation of culverts for proposed road crossings. However, based on the openness factors presented in **Table 4.5-53**, all of the culverts will be adequate for mule deer use, except for the culverts at Long Canyon 2 and Long Canyon 3. Following implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, the remaining wildlife corridors are expected to provide varying resident and movement habitat for the other wildlife guilds. The Semi-Aquatic and Low Mobility guild species are expected to use the constrained corridors where there is suitable habitat. The Mammal – Moderate Mobility guild species would also be likely to use the constrained corridors, although badgers moving through these corridors would be at a relatively high risk of vehicle collisions and ringtails are not expected to occur. The Moderate Mobility Aerial guild species may use portions of these corridors as resident habitat, but their movements may be constrained by culverts, forcing them to cross roadways during dispersal and, thus, either inhibiting dispersal or increasing their risk of vehicle collisions. The Mammal – High Mobility species would be variably affected. Mountain lions and black bears would be less likely to use these constrained corridors because of adjacent urban development and individuals that attempt to move through them would be at a high risk of negative interactions with humans and vehicle collisions. Coyotes and bobcats would be able to use these corridors without difficulty as long as adequate vegetative cover is available, although the risk to bobcats would be elevated due to negative interactions with humans and vehicle collisions. Mule deer would be likely to use most the corridors, but may be inhibited by smaller culverts in Long Canyon and forced to cross roads, thus increasing their risk of vehicle collisions. The High Mobility Aerial guild species would use portions of these corridors where there is suitable habitat and their movements would not be constrained. In addition, as described above, these constrained corridors will also introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species.

Because the movement of several of the wildlife guild species would be substantially affected under Alternative 2, these impacts to potential wildlife corridors would be significant, absent mitigation (significance criteria 4 and 7).

Alternative 3

Implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 3 (**Figure 4.5-41**) would result in similar impacts to wildlife corridors compared to Alternative 2. Alternative 3 differs from

Alternative 2 in that Potrero Canyon would have three road crossing culverts and two bridges (instead of five road crossing culverts as in Alternative 2); and San Martinez Grande Canyon would have one road crossing culvert and one bridge (instead of two road crossing culverts as in Alternative 2). All the bridge crossings would have openness factors of at least 3.23 and thus would be passable by all wildlife.

Although bridges have been substituted for road crossing culverts within Potrero Canyon and San Martinez Grande Canyon, the corridors would still be constrained by urban development and are not considered to effectively contribute to long-term habitat connectivity function in the Project area. As described for Alternative 2, these constrained corridors will also introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. The impacts to wildlife guilds discussed above for Alternative 2 would be similar under Alternative 3. Therefore, Alternative 3 would result in impacts to wildlife corridors that would be significant, absent mitigation.

Alternative 4

Implementation of the RMDP and SCP and build-out of the Specific Plan and Entrada planning areas under Alternative 4 (**Figure 4.5-42**) would result in similar impacts to wildlife corridors compared to Alternative 2. Alternative 4 differs from Alternative 2 in that Potrero Canyon would have three road crossing culverts and two bridges (instead of five road crossing culverts as in Alternative 2). All the bridge crossings would have openness factors of at least 3.23 and thus would be passable by all wildlife. Alternative 4 also differs from Alternative 2 in that VCC would not be constructed and corridor No. 13: Castaic/Hasley would not be constrained.

Although bridges have been substituted for road crossing culverts within Potrero Canyon, and the Castaic/Hasley corridor would not be constrained, the other corridors would still be constrained by urban development and are not considered to effectively contribute to long-term habitat connectivity function in the Project area. The impacts to wildlife guilds discussed above for Alternative 2 would be similar under Alternative 4. In addition, as described for Alternative 2, these constrained corridors will introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. Therefore, Alternative 4 would result in impacts to wildlife corridors that would be significant, absent mitigation.

Alternative 5

Implementation of the RMDP and SCP and build-out of the Specific Plan and Entrada planning areas under Alternative 5 (**Figure 4.5-43**) would result in similar impacts to wildlife corridors compared to Alternative 2. Alternative 5 differs from Alternative 2 in that Potrero Canyon would have one road crossing culvert and four bridges (instead of five road crossing culverts as in Alternative 2); Chiquito Canyon would have two road crossing culverts and one bridge (instead of three road crossing culverts as in Alternative 2). All the bridge crossings would have openness factors of at least 3.23 and thus would be passable by all wildlife. Alternative 5 also differs from Alternative 2 in that VCC would not be constructed and corridor No. 13: Castaic/Hasley would not be constrained.

Although bridges have been substituted for road crossing culverts within Potrero Canyon and Chiquito Canyon, and the Castaic/Hasley corridor would not be constrained, the other corridors would still be constrained by urban development and are not considered to effectively contribute to long-term habitat connectivity function in the Project area. The impacts to wildlife guilds discussed above for Alternative 2 would be similar under Alternative 5. In addition, as described for Alternative 2, these constrained corridors will introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. Therefore, Alternative 5 would result in impacts to wildlife corridors that would be significant, absent mitigation.

Alternative 6

Implementation of the RMDP and SCP and build-out of the Specific Plan and Entrada planning areas under Alternative 6 (**Figure 4.5-44**) would result in similar impacts to wildlife corridors compared to Alternative 2. Alternative 6 differs from Alternative 2 in that Potrero Canyon would have five bridges (instead of five road crossing culverts as in Alternative 2); San Martinez Grande Canyon would have two bridges (instead of two road crossing culverts as in Alternative 2). All the bridge crossings would have openness factors of at least 3.23 and thus would be passable by all wildlife. Alternative 6 also differs from Alternative 2 in that VCC would not be constructed and corridor No. 13: Castaic/Hasley would not be constrained.

Although bridges have been substituted for road crossing culverts within Potrero Canyon and San Martinez Grande Canyon, and the Castaic/Hasley corridor would not be constrained, the corridors would still be constrained by urban development and are not considered to effectively contribute to long-term habitat connectivity function in the Project area. The impacts to wildlife guilds discussed above for Alternative 2 would be similar under Alternative 6. In addition, as described for Alternative 2, these constrained corridors will introduce secondary effects that make them less suitable for wildlife,

including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. Therefore, Alternative 6 would result in impacts to wildlife corridors that would be significant, absent mitigation.

Alternative 7

Implementation of the RMDP and SCP and build-out of the Specific Plan and Entrada planning areas under Alternative 7 (**Figure 4.5-45**) would result in similar impacts to wildlife corridors compared to Alternative 2. Alternative 7 differs from Alternative 2 in that Potrero Canyon would have six bridges (instead of five road crossing culverts as in Alternative 2); Long Canyon would have two bridges (instead of three road crossing culverts as in Alternative 2); Chiquito Canyon would have three bridges (instead of three road crossing culverts as in Alternative 2); and San Martinez Grande Canyon would have two bridges instead of two road crossing culverts as in Alternative 2). All the bridge crossings would have openness factors of at least 3.23 and thus would be passable by all wildlife. Development in Middle Canyon and Off-Haul Canyon is also minimized. Alternative 7 also differs from Alternative 2 in that VCC would not be constructed and corridor No. 13: Castaic/Hasley would not be constrained.

Although bridges have been substituted for road crossing culverts within Potrero Canyon, Long Canyon, Chiquito Canyon, and San Martinez Grande Canyon, and the Castaic/Hasley corridor would not be constrained, the corridors would still be constrained by urban development and are not considered to effectively contribute to long-term habitat connectivity function in the Project area. The impacts to wildlife guilds discussed above for Alternative 2 would be similar under Alternative 7. In addition, as described for Alternative 2, these constrained corridors will introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, and feral cats and dogs; other mesopredators; and invasive species. Therefore, Alternative 7 would result in impacts to wildlife corridors that would be significant, absent mitigation.

Mitigation Summary and Strategy

Implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would have a significant impact, absent mitigation, to existing wildlife corridors with the Project area under Alternatives 2 through 7. The primary impacts of the Project would occur as a result of the build-out because most of the tributaries would be bordered by development, resulting in wildlife corridors that are long and narrow. As noted above, species that can move rapidly and/or are relatively unaffected by urban development, such as coyotes, are expected to regularly use these constrained corridors. Other species that are somewhat tolerant of human presence, but generally require vegetative cover habitat, such as bobcat and mule deer, are also likely to use these constrained corridors. Mountain lion and

American black bear are expected to be generally excluded from these constrained corridors. As described above for Alternative 2, most of the culverts will be passable by wildlife, with the exception of two culverts in Long Canyon that may be a barrier to mule deer. In addition, as described in detail for Alternative 2, these constrained corridors will introduce secondary effects that make them less suitable for wildlife, including lighting; noise; increased human activity; pet, stray, or feral cats and dogs; other mesopredators; and invasive species.

Then primary mitigation strategy for offsetting impacts to local wildlife corridors is protection, enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area, together comprising approximately 6,300 acres of contiguous habitat. These areas were identified by Penrod *et al.* (2006) as important regional wildlife habitat linkages. Wildlife would be expected to use these areas to move across the landscape. In addition, because the Project would be phased over a period of up to 20 years, wildlife would be able to incrementally adjust their use of and movement in the Project vicinity over time. This large open space system will provide important resources to support wildlife, including perennial water sources, cover, refuge, foraging habitat, and resting areas.

The following sections identify the mitigation measures that would reduce general significant impacts to wildlife corridors to a level that would be adverse but not significant. Species-specific mitigation measures are discussed below in **Subsection 4.5.5.3**.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will help mitigate significant impacts to wildlife corridors in the Project area that would occur under all of the alternatives. These mitigation measures primarily involve protection, restoration/enhancement, and management of the River Corridor SMA and High Country SMA. These areas will provide wildlife within adequate movement and resident habitat to ensure the connectivity in the region is maintained. The lighting mitigation measure below will mitigate for secondary lighting effects, which could induce physiological stress, alter daily cycles and disrupt behavior patterns, and increase predation within the constrained corridors and along the open space–urban interface.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources. This mitigation will ensure that habitat conditions and values in the River Corridor SMA are maintained and provide cover and refuge for wildlife using and moving through this area.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and provide wildlife with movement habitat (**Figures 4.5-3** and **4.5-22**).

Several mitigation measures will be implemented to control human activities in the River Corridor SMA and High Country SMA. These measures will help ensure that wildlife movement through and use of these areas will relatively undisturbed. SP-4.6-17 and SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the River Corridor SMA and High Country SMA.

SP-4.6-56 will be implemented to control nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas. This measure will control some of the lighting edge effects that could occur along the constrained linkages and at the interface between the large open spaces areas (River Corridor SMA, High Country SMA, and Salt Creek area).

Measures Recommended by EIS/EIR

The EIS/EIR recommends the following mitigation measures that will reduce and mitigate significant impacts to wildlife corridors, including loss of movement habitat within the development areas, and as a result of secondary effects such as vehicle collisions; non-native species; increased human activity; pet, stray, and feral cats and dogs; and Argentine ants. These mitigation measures also involve restoration/enhancement, and management of the River Corridor SMA and High Country SMA, as well as protection, restoration/enhancement, and management of the Salt Creek area, which will provide wildlife within adequate movement and resident habitat in the region.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. This

mitigation will ensure that habitat conditions and values in the River Corridor are maintained and provide cover and refuge for wildlife using and moving through this area.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The addition of the Salt Creek area to the open space system provides a large, contiguous habitat landscape that will allow wildlife movement through the region without the need for animals to travel through developed areas. BIO-19 includes a provision to enhance the existing agricultural undercrossing and agricultural land at the base of Salt Creek to facilitate wildlife movement between the north side of SR-126 and the Salt Creek area. This enhancement would include dedication of a portion of the agricultural field north of SR-126 and planting of trees and/or scrub habitat north and south of the existing undercrossing of the highway.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, fire ecology, erosion, drought, or unforeseen events.

BIO-59 specifies that a wildlife movement corridor plan shall be prepared and implemented to reduce vehicle collisions. The plan will include design criteria for road crossings and methods to encourage passage, such as lighting, bubblers, and vegetation planting. Signs shall be installed along roadways, indicating potential wildlife crossings where mountain lions and mule deer are likely to cross. Road under-crossings will be built in accordance with current wildlife corridors used by mountain lions and mule deer, and, as such, will accommodate a variety of wildlife.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs. These measures will collectively minimize human-related impacts to wildlife using and moving through open space areas.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all River Corridor SMA trails to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-72, BIO-85, and BIO-87 address impacts from Argentine ants. Although Argentine ants generally will not affect highly mobile species moving through the Project area, they can affect small native species, and especially native reptiles and amphibians and small birds, through displacement of native invertebrate prey (*e.g.*, loss of native ants that are primary prey for coast horned lizard) and through predation of young. These impacts could reduce habitat quality within the constrained corridors for resident species and reduce the function of these constrained corridors as conduits for dispersal of these species.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also benefit yellow warbler by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Impacts to Wildlife Corridors After Mitigation

After mitigation, impacts to wildlife corridors would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

4.5.5.2.4.4 *Wildlife Crossings*

The discussion of wildlife crossings in this subsection focuses on the existing crossings that are primarily located under SR-126, linking the Santa Clara River corridor through drainages to areas north of the Project area and the variable number of large bridge crossings of the Santa Clara River under the different alternatives. **Subsection 4.5.5.2.4.3** addressed culvert and bridge crossings that would be constructed in the various tributary canyons within the Specific Plan area and their effects on movement by species in the different wildlife guilds.

Figure 4.5-32 shows the six main existing crossing locations, including three crossings in Ventura County west of the Project area that can be accessed by wildlife moving along the Santa Clara River. The three off-site crossings, which are associated with current agricultural operations, are arched culverts large enough for vehicles to pass through and are large enough to convey the Mammal – High Mobility guild species, as discussed above in **Subsection 4.5.3.4.7**. These crossings measure about 4.4 meters (14 feet, 7 inches) in height, 7.5 meters (25 feet) in width, and 51.8 meters (170 feet) in length, resulting in an openness factor of 0.65, which well exceeds the openness factor of 0.25 found by Donaldson (2005) to be adequate for white-tailed deer. The easternmost of these will serve wildlife movement within and through the Project area *via* the Salt Creek corridors discussed above in **Subsections 4.5.5.2.4.2** and **4.5.5.2.4.3**, as well as Tapo Canyon in Ventura County. These crossings were identified by Penrod *et al*. (2006) as serving regional habitat connectivity.

Within the Project area, there are existing crossings at San Martinez Grande and Chiquito canyons and at the Castaic Creek confluence north of SR-126 and the Santa Clara River. These crossings are short and include soft-bottom overpasses and box culverts, as shown in **Figure 4.5-32**. Currently all three crossings are large and open enough to accommodate most of the wildlife guild species, although the Chiquito Creek box culverts are becoming increasingly constricted by a build up of sediments. However, the Chiquito Creek box culverts will be replaced by a bridge structure, so this crossing will be adequate for the wildlife passage in the future. The bridge structure over San Martinez Grande will remain the same size and added on-ramps will also be bridge structures that will allow wildlife movement (see discussion in **Subsection 4.5.5.2.4.3**).

The alternatives analysis in the remainder of this subsection addresses potential impacts of the bridge crossings of the Santa Clara River. Potential impacts to Mammal – High Mobility guild species resulting from construction of these bridges are discussed. It is assumed, for the purpose of this analysis, that clearance under these bridges that would accommodate the Mammal – High Mobility guild species would also accommodate the other terrestrial wildlife guilds. The impact of the RMDP, including bridge construction, on the Aquatic (Fish) guild was discussed above in **Subsection 4.5.5.2.4.2**, with the conclusion that fish passage would not be significantly affected by the RMDP.

Alternative 2

Implementation of the RMDP and SCP under Alternative 2 would result in the construction of three large-span bridges across the Santa Clara River corridor (Commerce Center Drive Bridge, Long Canyon Road Bridge, and Potrero Canyon Road Bridge). These bridges would not inhibit wildlife movement along the River because the proposed structures would span long lengths and would allow sufficient daylight. Commerce Center Drive Bridge would be 1,260 feet long, 120 feet wide, and have a vertical clearance of 25 feet. The Long Canyon Road Bridge would be 980 feet long, 114 feet wide, and have a vertical clearance of 19 feet. The Potrero Canyon Road Bridge would be 1,350 feet long, 100 feet wide, and have a vertical clearance of 16 feet. All three bridge vertical clearances exceed the recommended minimum height of 10 feet for black bear, mountain lion, and deer by Ruediger and DiGiorgio (2007) (**Table 4.5-22** in **Subsection 4.5.3.4.7**). The minimum openness factor of the three bridges would be 49.78 for the Long Canyon Bridge, which far exceeds the 0.25 openness factor considered necessary for deer (Donaldson 2005).

These bridges would be adequate for passage of Mammal – High Mobility guild species and would accommodate species in the other guilds as well. Although these bridges dimensionally are adequate for passage, the behavioral patterns of some species may be altered by secondary effects of the bridges, including traffic noise and lighting. Species that would normally pass through the River at any time of day may restrict their movements near the bridges to the nighttime when noise levels and other human activity are reduced. Bridge lighting may alter the movement routes taken by some wildlife.

Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the construction of any bridges across the Santa Clara River corridor.

Significance Finding for Impacts to Wildlife Crossings: Adverse but not significant for Alternative 2. The consideration of impacts to wildlife crossings falls under the following significance criteria as previously identified in **Subsection 4.5.4**: (4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; and (7) Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

As discussed above, the wildlife crossings associated with implementation of the RMDP would not physically inhibit wildlife movement along the Santa Clara River because the proposed structures would span long lengths and would allow sufficient daylight. However, there may be some alterations in behavior as wildlife move through the River

corridor as a result of secondary impacts such as traffic noise and lighting. These secondary impacts are not considered to be substantial enough to meet the significance criteria because the River corridor is wide enough and well-vegetated enough to provide adequate protection for wildlife as they move along the corridor.

Implementation of Alternative 2 would result in adverse but not significant impacts to wildlife crossings of the Santa Clara River corridor.

Alternative 3

Implementation of the RMDP and SCP under Alternative 3 would result in the construction of two large-span bridges across the Santa Clara River corridor (Commerce Center Drive Bridge and Long Canyon Road Bridge). Alternative 3 differs from Alternative 2 in that Potrero Canyon Road Bridge would not be constructed. The height, width, and vertical clearance of Commerce Center Drive Bridge and Long Canyon Road Bridge under Alternative 3 are the same as under Alternative 2. The potential secondary impacts to wildlife discussed above for Alternative 2 also apply to Alternative 3.

Implementation of Alternative 3 would result in adverse but not significant impacts to wildlife crossings.

Alternative 4

Implementation of the RMDP and SCP under Alternative 4 would result in the construction of two large-span bridges across the Santa Clara River corridor (Commerce Center Drive Bridge and Long Canyon Road Bridge). Alternative 4 differs from Alternative 2 in that Potrero Canyon Road Bridge would not be constructed. The height, width, and vertical clearance of Commerce Center Drive Bridge and Long Canyon Road Bridge under Alternative 4 are the same as under Alternative 2. The potential secondary impacts to wildlife discussed above for Alternative 2 also apply to Alternative 4.

Implementation of Alternative 4 would result in adverse but not significant impacts to wildlife crossings.

Alternative 5

Implementation of the RMDP and SCP under Alternative 5 would result in the construction of three large-span bridges across the Santa Clara River corridor (Commerce Center Drive Bridge, Long Canyon Road Bridge, and Potrero Canyon Road Bridge). Alternative 5 differs from Alternative 2 in that Potrero Canyon Road Bridge is 2,290 feet long compared to 1,305 feet for Alternative 2 (width and vertical clearance are the same as for Alternative 2). The height, width, and vertical clearance of Commerce Center Drive Bridge and Long Canyon Road Bridge under Alternative 5 are the same as under

Alternative 2. The potential secondary impacts to wildlife discussed above for Alternative 2 also apply to Alternative 5.

Implementation of Alternative 5 would result in adverse but not significant impacts to wildlife crossings.

Alternative 6

Implementation of the RMDP and SCP under Alternative 6 would result in the construction of two large-span bridges across the Santa Clara River corridor (Long Canyon Road Bridge and Potrero Canyon Road Bridge). Alternative 6 differs from Alternative 2 in that Commerce Center Road Bridge would not be constructed, and Potrero Canyon Road Bridge is 2,390 feet long instead of 1,350 feet long as in Alternative 2 (width and vertical clearance are the same as for Alternative 2). The height, width, and vertical clearance of Long Canyon Road Bridge under Alternative 6 are the same as under Alternative 2. The potential secondary impacts to wildlife discussed above for Alternative 2 also apply to Alternative 6.

Implementation of Alternative 6 would result in adverse but not significant impacts to wildlife crossings.

Alternative 7

Implementation of the RMDP and SCP under Alternative 6 would result in the construction of one large-span bridge across the Santa Clara River corridor (Long Canyon Road Bridge). Alternative 7 differs from Alternative 2 in that Commerce Center Road Bridge and Potrero Canyon Road Bridge would not be constructed, and Long Canyon Road Bridge is 2,620 feet long instead of 980 feet long as in Alternative 2 (width and vertical clearance are the same as for Alternative 2). The potential secondary impacts to wildlife discussed above for Alternative 2 also apply to Alternative 7.

Implementation of Alternative 7 would result in adverse but not significant impacts to wildlife crossings.

Mitigation Summary and Strategy

Although impacts to wildlife crossings would not be significant and mitigation is not required, the protection of the River Corridor SMA, High Country SMA, and Salt Creek area, as discussed above for wildlife corridors, would reduce the effects of constrained wildlife crossings in the Project area by providing alternative routes for movement. In addition, improvements and enhancement of the existing wildlife crossing under SR-126 west of the Project area at the base of Salt Creek (see BIO-19) will facilitate north–south movement. The requirement for downcast lighting adjacent to open space areas will reduce lighting impacts on wildlife using both unconstrained and constrained crossings.

4.5.5.3 Impacts to Special-Status Species

This subsection describes the impacts to special-status species. As fully described in **Subsection 4.5.5.1**, impacts are categorized as direct, indirect, and secondary for each alternative.

Direct impacts would occur as a result of implementation of the RMDP and the SCP and include temporary disturbance to and/or permanent loss of special-status plant and animal species and/or their habitat from grading, clearing, and other construction-related activities. Direct permanent loss would result from proposed RMDP improvements, including:

- Construction of bridges and associated piers and abutments;
- Road crossing culverts;
- Bank stabilization/protection that includes ungrouted rock riprap, turf reinforcement mats, and exposed gunite slope-lining protection under bridge crossings and their abutments;
- Drainage facilities that include partially lined open channels;
- Grade controls and other channel improvements, including grade control structures in tributaries; engineered natural channels in Potrero, Long, and Lion canyons; grouted sloping boulder drops; non-grouted boulder step-pools; soil-cement grade control structures; sculpted concrete drop structures; and check structures;
- Water reclamation plant outfall;
- Water quality control features, such as water quality basins, debris basins, detention basins, catch basin inserts, and biorention features;
- Various roadway improvements to SR-126; and
- Recreation facilities.

Permanent loss of habitat (California annual grassland, agriculture, disturbed land) for some special-status species will also occur as a result of habitat restoration and enhancement activities.

Temporary loss of habitat for special-status species includes vegetation and land cover clearing, grading, and other Project-related disturbances (*e.g.*, temporary haul routes) in the Project area that temporarily displace the habitat that was present prior to construction. Temporary impacts would occur where grading or soil disturbance would occur for a short period of time (*e.g.*, along the edges of proposed facilities), but where no permanent structures would be constructed and no disturbance would occur.

Implementation of the proposed Project would also result in impacts to wildlife movement corridors and unique landscape features, such as the River Corridor SMA, High Country SMA, and Middle Canyon Spring.

Indirect impacts would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. Indirect impacts also include permanent loss of special-status plant and animal species as a result of grading, clearing, and other construction-related activities. For purposes of analyzing indirect impacts, any temporary disturbance areas are included in the permanent footprint. (There are no temporary impacts identified for build-out of the Specific Plan, VCC, and Entrada planning areas.)

Secondary impacts are those reasonably foreseeable effects caused by Project implementation on remaining or adjacent biological resources outside the construction disturbance zone (*i.e.*, off-site impacts). Secondary impacts may affect areas within the defined Project area but outside the construction disturbance zone, including open space, and areas outside the Project area, such as downstream effects. Secondary impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to the human occupation of developed areas. Both implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in short-term construction-related secondary impacts and long-term secondary impacts. These impacts are listed here and fully described in **Subsection 4.5.5.1.3**. It should be noted that many of the secondary impacts listed below may only be relevant to particular species or guilds; for example, hydrology and water quality impacts primarily affect aquatic, semi-aquatic, and riparian species.

Potential short-term construction-related impacts include hydrologic and water quality alterations; erosion and chemical and toxic compound pollution in uplands; dust; construction noise; vibration; lighting; increased human activity; temporary fencing; accidental clearing, trampling, and grading; oak tree root impacts; and trash and other debris.

Potential long-term secondary impacts resulting from implementation of the RMDP and the build-out of the Specific Plan, VCC, and Entrada planning areas generally can be categorized as (1) landscape-level impacts or (2) "edge" effects that generally occur along the open space–urban interface.

Landscape-level secondary impacts include bridge/road crossings, traffic noise, and lighting; altered hydrology; watershed-level water quality impacts; downstream effects of drainage and control facilities and water reclamation plant outfall; downstream effects of water quality control facilities; monitoring and maintenance of RMDP facilities; utility transmission lines; maintenance of utility crossings; recreational facilities; improvements to SR-126; stream restoration and enhancement activities; habitat fragmentation and isolation; altered natural wildfire regimes; increased traffic and vehicle collisions; air pollution; increased human activity; increased mesopredators; increased invasive plants; increased invasive aquatic and semi-aquatic species; microtrash (pertinent to condors); and increased risk of disease.

Open space–urban interface secondary impacts include increased noise; lighting; pet, stray, and feral animals; microclimate changes; invasive plant species; wildlife community alterations; trampling of vegetation and compaction of soils; pesticides, fertilizers, fungicides, herbicides, and rodenticides; and human collection and harassment of native species.

Table 4.5-54 shows the status and guild for each of the special-status species discussed in this subsection, as well as the order in which species appear in the text.

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
Wildlife: Federally Endangered (FE), California Endangered (CE), Federally Threatened (FT), California Threatened (CT), Federal Candidate (FC), California Fully Protected (CFP)		
arroyo toad	FE, CSC	Reptile and Amphibian – Semi-Aquatic
California red-legged frog	FT, CSC	Reptile and Amphibian – Semi-Aquatic
southern steelhead	FE, CSC	Fish
unarmored threespine stickleback	FE, CE, CFP	Fish
American peregrine falcon	CE, BCC, CFP	Bird – Raptor
California condor	FE, CE, CFP	Bird – Raptor
golden eagle (nesting and wintering)	CFP, BCC, WL	Bird – Raptor
white-tailed kite (nesting)	CFP	Bird – Raptor
least Bell's vireo (nesting)	FE, CE	Bird – Riparian
southwestern willow flycatcher (nesting)	FE, CE	Bird – Riparian
western yellow-billed cuckoo (nesting)	CE, FC, BCC	Bird – Riparian
coastal California gnatcatcher	FT, CSC	Bird – Upland Scrub and Chaparral
ringtail	CFP	Mammal – Moderate Mobility
Wildlife: California Species of Special Concern (CSC)		
undescribed snail	CSC (not currently CSC, but assumed to meet criteria)	Mollusk
coast horned lizard	CSC	Reptile – Low Mobility
coast patch-nosed snake	CSC	Reptile – Low Mobility
silvery legless lizard	CSC	Reptile – Low Mobility
south coast garter snake	CSC	Reptile and Amphibian – Semi-Aquatic
southwestern pond turtle	CSC	Reptile and Amphibian – Semi-Aquatic

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
two-striped garter snake	CSC	Reptile and Amphibian – Semi-Aquatic
western spadefoot toad	CSC	Reptile and Amphibian – Semi-Aquatic
arroyo chub	CSC	Fish
Santa Ana sucker	CSC	Fish
loggerhead shrike	CSC, BCC	Bird – Raptor
long-eared owl (nesting)	CSC	Bird – Raptor
northern harrier (nesting)	CSC	Bird – Raptor
short-eared owl (nesting)	CSC, USBC	Bird – Raptor
western burrowing owl (burrow sites and some wintering sites)	CSC, BCC	Bird – Raptor
summer tanager (nesting)	CSC	Bird – Riparian
tricolored blackbird (nesting colony)	CSC, BCC	Bird – Riparian
vermilion flycatcher (nesting)	CSC	Bird – Riparian
yellow-breasted chat (nesting)	CSC	Bird – Riparian
yellow-headed blackbird (nesting)	CSC	Bird – Riparian
yellow warbler (nesting)	CSC	Bird – Riparian
grasshopper sparrow (nesting)	CSC	Bird – Upland Grassland
pallid bat	CSC	Bat
pocketed free-tailed bat	CSC	Bat
Townsend's big-eared bat	CSC	Bat
western mastiff bat	CSC	Bat
western red bat	CSC	Bat
San Diego desert woodrat	CSC	Mammal – Low Mobility
southern grasshopper mouse	CSC	Mammal – Low Mobility
American badger	CSC	Mammal – Moderate Mobility
San Diego black-tailed jackrabbit	CSC	Mammal – Moderate Mobility

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
Wildlife: Special Animal, Watch List (WL), Specially Protected Mammal, Trust Resource		
monarch butterfly (wintering sites)	Special Animal	Insect (Butterflies)
San Emigdio blue butterfly	Special Animal	Insect (Butterflies)
coastal western whiptail	Special Animal	Reptile – Low Mobility
rosy boa	Special Animal	Reptile – Low Mobility
San Bernardino ringneck snake	Special Animal	Reptile – Low Mobility
Cooper's hawk (nesting)	WL	Bird – Raptor
ferruginous hawk (wintering)	WL, BCC	Bird – Raptor
merlin (wintering)	WL	Bird – Raptor
prairie falcon (nesting)	WL, BCC	Bird – Raptor
sharp-shinned hawk (nesting)	WL	Bird – Raptor
turkey vulture	Trust Resource	Bird – Raptor
black-crowned night-heron (rookery)	Special Animal	Bird – Riparian
Nuttall's woodpecker (nesting)	Special Animal	Bird – Riparian
California horned lark	WL	Bird – Upland Grassland
Allen's hummingbird (nesting)	Special Animal	Bird – Upland Scrub and Chaparral
Bell's sage sparrow (nesting)	WL, BCC	Bird – Upland Scrub and Chaparral
black-chinned sparrow (nesting)	Special Animal, BCC	Bird – Upland Scrub and Chaparral
Costa's hummingbird (nesting)	Special Animal	Bird – Upland Scrub and Chaparral
rufous hummingbird (nesting)	Special Animal, BCC	Bird – Upland Scrub and Chaparral
southern California rufous-crowned sparrow	WL	Bird – Upland Scrub and Chaparral
chipping sparrow (nesting)	Special Animal	Bird – Upland Woodland
hermit warbler (nesting)	Trust Resource	Bird – Upland Woodland
Lawrence's goldfinch (nesting)	Special Animal, BCC	Bird – Upland Woodland
oak titmouse (nesting)	Special Animal	Bird – Upland Woodland

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
fringed myotis	Special Animal	Bat
long-legged myotis	Special Animal	Bat
western small-footed myotis	Special Animal	Bat
Yuma myotis	Special Animal	Bat
black bear	Trust Resource	Mammal – High Mobility
mountain lion	Specially Protected Mammal	Mammal – High Mobility
mule deer	Trust Resource	Mammal – High Mobility
	Plants: FE, CE, FT, CT, FC	
San Fernando Valley spineflower	CE, FC, CNPS LIST 1B.1/S1.1	Plant
	Plants: CNPS, Locally Regulated	
undescribed everlasting	CNPS (not currently on CNPS list, but assumed to meet criteria)	Plant
undescribed sunflower	CNPS (not currently on CNPS list, but assumed to meet criteria)	Plant
island mountain-mahogany	CNPS LIST 4.3/S3.3	Plant
late-flowered mariposa lily	CNPS LIST 1B.2/S2.2	Plant
mainland cherry	Locally Regulated	Plant
oak trees	Locally Regulated	Plant
oak-leaved nemophila	CNPS LIST 4.3/S3.3	Plant
Ojai navarretia	CNPS LIST 1B.1/S2	Plant
Parish’s sagebrush	Locally Regulated	Plant
Peirson’s morning-glory	CNPS LIST 4.2/S3.2	Plant
Plummer's mariposa lily	CNPS LIST 1B.2/S3.2	Plant
slender mariposa lily	CNPS LIST 1B.2/S1.1	Plant

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
southern California black walnut	CNPS LIST 4.2/S3.2	Plant
southwestern spiny rush	CNPS LIST 4.2/S3.2	Plant

ARROYO TOAD (FE, CSC)

Life History

The arroyo toad (*Bufo californicus*) is found along low-gradient streams in coastal and desert drainages as well as high-elevation valleys in southern California and northern Baja California, Mexico. It uses aquatic, riparian, and upland habitats to different degrees depending on an individual's stage of development, the time of year, and the weather. Breeding and larval development occur within aquatic habitats; foraging may occur within drying stream beds, terraces adjacent to breeding sites, and nearby uplands, where aestivation and overwintering also occur. Breeding habitat for the arroyo toad is created and maintained by the fluctuating hydrological, geological, and ecological processes operating in riparian ecosystems and the adjacent uplands. Periodic flooding that modifies stream channels, redistributes channel sediments, and alters pool location and form, coupled with upper terrace stabilization by vegetation, is required to keep a stream segment suitable for all life stages of the arroyo toad (66 FR 9413–9474). Periodic flooding helps maintain areas of open, sparsely vegetated, sandy stream channels and terraces (Sweet 1992; Griffin and Case 2001). During the day and other periods of inactivity, arroyo toads seek shelter by burrowing into sand (Sweet 1992). Thus, areas of sandy or friable (readily crumbled) soils are the most important habitat for the species, and these soils can be interspersed with gravel or cobble deposits (70 FR 19562–19633). Radio telemetry studies at near-coastal locations (Griffin 1999) and montane sites (Ramirez 2002) documented extensive along-stream movements of adult and juvenile toads during their extended activity season. Arroyo toads may also seek temporary shelter under rocks or debris and have occasionally been found in mammal burrows (Griffin 1999). However, the use of burrows is not well understood and is believed to be an uncommon event (Haas 2005a).

Breeding generally occurs from late March until mid-June (Sweet 1989); however, depending on climatological and hydrologic conditions, breeding may commence as early as mid-February (Haas 2004) and extend into July. Arroyo toads move within streams and rivers to find suitable breeding and foraging habitats, as well as potential mates. In years when breeding conditions are fleeting, male advertisement may persist for extremely short periods, and the species' presence may be difficult to detect in the absence of frequent, early season surveys (Haas 2005A). Females rarely choose breeding sites under closed canopies; heavily shaded pools are generally unsuitable for eggs and larval arroyo toads because of lower water and soil temperatures and poor algal mat development (66 FR 9413–9474). Eggs are deposited in shallow aquatic habitats characterized by sandy and/or gravelly substrates and where silt deposition is minimal. The filter-feeding arroyo toad tadpoles require algal mats for development. Breeding sites are typically located adjacent to sandy terraces (59 FR 64589–64866); at or near the edge of shallow pools, low-flow stream channels, and ox-bows; and along in-stream sand bars with minimal current (zero to two kilometers (1.24 miles) per hour), and little or no emergent vegetation. After metamorphosis, which typically occurs in the period from May to July, neonate toads remain

along or very near breeding sites, in order to take advantage of available forage and ambient moisture—especially the moist, sandy substrate of drying pools. Over a period of several weeks, the neonates mature in size and they leave wet or moist stream areas and river edges once they are physically capable of burying themselves in local substrates (Sweet 1992).

In many drainages, the arroyo toad does not breed annually, and metapopulations of the arroyo toad may persist for seven years or more between breeding events (Haas 2005B). Moreover, early season breeding attempts may be unsuccessful if surface flows do not persist for the requisite 60 to 75 days necessary to support larvae to metamorphosis. Thus, early season surveys are necessary to determine presence/absence status of the arroyo toad, especially in years of below-average rainfall (Haas 2004). In years when heavy rains (or planned water releases) affect breeding sites, arroyo toad larvae may swim or be flushed downstream due to heavy currents (Griffin 1999). Survivorship of these individuals has never been documented; thus, the effects of such events are unknown.

Outside of the breeding season, juvenile and adult arroyo toads are terrestrial and spend most of their lives on open terraces and in riparian habitats, typically adjacent to breeding locations, and, less commonly, moving into upland habitats. Riparian areas used by juveniles and adults for foraging and burrowing include sand bars, alluvial terraces, and streamside benches that lack vegetation or are sparsely to moderately vegetated (Sweet 1992; Holland and Sisk 2001). Upland habitats occupied by the arroyo toad include alluvial scrubs, sage scrubs, open chaparral, grassland, and oak woodland (Griffin and Case 2001). Friable sandy soils used for burrowing are the common factor in these occupied habitats. Arroyo toads also have been found in agricultural fields (Griffin 1999), but these lands may be habitat sinks (areas where mortality rates are higher than reproduction rates and thus lead to population declines over the long term) due to soil type, tilling, pesticide and fertilizer applications, and heavy equipment use (Griffin and Case 2001).

Subadults and adults may range widely into the surrounding uplands; however, most individuals remain on sandy terraces adjacent to breeding habitat. Smaller numbers of juveniles and adults range widely into surrounding upland habitats, and may move up to one kilometer (0.6 mile) or more from breeding sites (Holland and Sisk 2000; Bloom 2007). In some cases, adults have been found at distances greater than one kilometer from riparian areas, such as in upper Cristianitos Canyon in southern Orange County, where at least one individual was detected 3.4 kilometers (2.1 miles) from the nearest breeding population (Bloom Biological 2007B). The distance traveled from a breeding site depends on topography (*e.g.*, mild slopes are more easily traversed than steeper slopes) and presence of navigable pathways (*e.g.*, roads, game trails, open habitats). Movements into uplands may facilitate foraging and dispersal; however, areas with extremely compact soils may act as habitat sinks, the use of which may result in desiccation and increased predator pressure.

Critical Habitat

Reaches of the Santa Clara River and Castaic Creek in the Project area were within Unit 6: Upper Santa Clara River Basin, Los Angeles County of the final rule designating arroyo toad critical habitat published on February 7, 2001 (66 FR 9413–9474). As stated in 66 FR 9418 of the 2001 critical habitat designation, the USFWS is "required to base critical habitat determinations on the best scientific and commercial data available and to consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species."

The 2001 critical habitat designation identified Subunit 6b, which included Castaic Creek to its confluence with the Santa Clara River, and the River upstream to its confluence with San Francisquito Creek. Although the arroyo toad had not been documented in Santa Clara River at the time of the final rule, the USFWS considered the River to be essential to the dispersal of toads between Castaic Creek and San Francisquito Creek (66 FR 9422).

On October 30, 2002, the federal court of the District of Columbia set aside the 2001 critical habitat designation on the basis of a lawsuit challenging the designation of arroyo toad critical habitat, citing errors by the USFWS in promulgating the rule (69 FR 23256). On April 28, 2004, the USFWS proposed a new rule designating critical habitat that differed from the previous designation in regard to mapping grid size and new survey information for the arroyo toad. Unit 6 was retained in the proposed designation, but Subunit 6b was revised based on new survey information, including expansion of critical habitat to uplands to support breeding populations of the arroyo toad.

On April 13, 2005, the USFWS issued the final critical habitat designation for the arroyo toad (70 FR 19562). As the basis for the 2005 critical habitat designation, the USFWS identified the "primary constituent elements" that the USFWS considers to be the "physical and biological attributes that are essential to the conservation of the species and that may require special management considerations or protections" (59 FR 64846). The 2005 critical habitat designation identified the arroyo toad's primary constituent elements as:

1. Rivers or streams with hydrologic regimes that supply water to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads.

2. Low-gradient streams (less than 6% slope) with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles.

3. A natural flooding regime, or one sufficiently corresponding to a natural regime, that will periodically scour riparian vegetation, rework stream channels and terraces, and

redistribute sands and sediments, such that breeding pools and terrace habitats with scattered vegetation are maintained.

4. Riparian and adjacent upland habitats (*e.g.*, alluvial scrub, coastal sage scrub, chaparral, and oak woodlands, but particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground) to provide foraging, aestivation, and living areas for subadult and adult arroyo toads.

5. Stream channels and adjacent upland habitats that allow for migration to foraging areas, overwintering sites, dispersal between populations, and recolonization of areas that contain suitable habitat.

The USFWS reduced the critical habitat area from the 95,655 acres proposed in February 2004 to 11,695 acres in the 2005 final designation (70 FR 19562–19633). Based solely on economic considerations, the final critical habitat designation excluded 13 units in the proposed rule, totaling 67,584 acres (including Unit 6), which encompassed the Project area.[1] These excluded units are located in Santa Barbara, Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties. Portions of two other units in Orange and San Diego counties were excluded from critical habitat based on economic considerations and a combination of other factors. All proposed critical habitat in Monterey, Orange, and San Diego counties was excluded in the final rule. The final rule, however, is the subject of pending litigation.

Because there is no critical habitat designation for the Project area, critical habitat is not further addressed in the arroyo toad analysis in this EIS/EIR.

Recovery Plan

The Arroyo Southwestern Toad Recovery Plan was published by the USFWS on July 24, 1999 (USFWS 1999A). The recovery strategy for the arroyo toad consists of five parts: (1) stabilize and maintain populations through the range of the arroyo toad in California by protecting sufficient breeding and nonbreeding habitat; (2) monitor the status of existing populations to ensure recovery actions are successful; (3) identify and secure, by appropriate management and monitoring, additional suitable arroyo toad habitat and populations; (4) conduct research to determine the population dynamics and ecology of the species to guide management efforts and determine the best methods for reducing threats; and (5) develop and implement an outreach program.

[1] Essential lands in Unit 6 were excluded from the critical habitat designation under Endangered Species Act section 4(b)(2) for economic reasons. See Application of Endangered Species Act sections 3(5)(A) and 4(a)(3) and Exclusions Under Endangered Species Act section 4(b)(2) (70 FR 19585).

The Santa Clara River basin is included in Subregion 7 of the Northern Recovery Unit. More specifically, waterways included in this Recovery Unit Subregion include Sespe Creek, Piru Creek, Agua Blanca Creek, Castaic Creek, San Francisquito Creek, and Bouquet Creek (USFWS 1999A). The inclusion of these waterways is based on current or historic occurrences of arroyo toad in portions of the drainages. The Santa Clara River is not directly identified in the Recovery Plan as having a conservation role in the recovery strategy for the species. Therefore, the Recovery Plan is not further addressed in the analysis for the arroyo toad in this EIS/EIR.

Threats

In addition to the direct loss of aquatic, riparian, and upland habitat, other factors associated with urban development that contribute to declining arroyo toad populations were identified in the 2001 final designation of critical habitat (66 FR 9413–9474). The natural flow of streams can be altered by surface runoff from urban development and agricultural uses. Water pollution, in the form of fertilizers, biocides, chlorine, and other pollutants, adversely affects amphibian development, survival, and habitat. Further, the introduction of exotic predators (*e.g.*, bullfrog, African clawed frog, and green sunfish) and increases in mesopredators (*e.g.*, raccoons and skunks) often associated with urban development can threaten or eliminate toad populations (69 FR 23254–23328). Exotic plant species (*e.g.*, tamarisk, giant reed, iceplant, and pampas grass) may also degrade arroyo toad habitat by contributing to altered hydrology, eliminating sandbars and breeding pools, and restricting access to and quality of upland habitats (69 FR 23254–23328). Other factors that may adversely affect the species include livestock grazing and recreational activities in riparian areas and human-related increases in fire frequency and light and noise levels that may affect the species' nocturnal foraging and breeding behavior (Barrass and Cohn 1984).

Survey Results

Protocol surveys and habitat evaluations for arroyo toad have been conducted throughout the portions of the Santa Clara River and Castaic Creek in the Project area (RECON 1999A; Aquatic Consulting Services, Inc., 2002A, 2002B, 2002C, 2002D; Sandburg 2001; Impact Sciences 2001, 2002; Ecological Sciences 2003A, 2003B, 2003C, 2003D, 2003E, 2003F, 2004A, 2004B, 2004C, 2004D; Compliance Biology 2004D; Bloom 2007). During these surveys, no adult or subadult arroyo toads were observed in the Project area. However, arroyo toad tadpoles were observed in the Specific Plan area during surveys conducted in 2000 (Aquatic Consulting Services, Inc., 2002A, 2002B, 2002C, 2002D). During these surveys Aquatic Consulting Services found arroyo toad tadpoles in the Santa Clara River upstream and downstream of the proposed Commerce Center Drive Bridge site and near the Valencia Water Treatment Plant (**Figure 4.5-46**, RMDP/SCP Arroyo Toad Species Occurrences).

Other documented occurrences of arroyo toad in the upper Santa Clara River watershed (but outside the Project area boundaries) include:

- Santa Clara River just east of I-5: one individual captured and released on July 20, 1994 (CDFG 2007A);
- Castaic Creek: occurrences have been documented on Department of Water Resources land and the Angeles National Forest, both above and below Castaic Lake Reservoir (70 FR 19562–19633);
- Upper San Francisquito Creek: calling male arroyo toads observed in 1997 near the old Saint Francis Dam (70 FR 19562–19633);
- Upper San Francisquito Creek: recent surveys (presumably on U.S. Forest Service land) "found evidence of the species" in the drainage (70 FR 19562–19633);
- Santa Clara River: report of six arroyo toad tadpoles adjacent to Castaic Junction in 2000 (CDFG 2007A);
- Santa Clara River: four adult arroyo toads reported by Sandburg near the confluence of San Francisquito Creek in April 2001 (unpublished notes sent to USFWS);
- Santa Clara River: a single adult was observed near the confluence of San Francisquito Creek (Impact Sciences 2002);
- Soledad Canyon area: 75 tadpoles reported from three sites located approximately 11 miles east of the I-5 crossing (Sandburg 2001); and
- Santa Clara River: in 2003, Ramirez reported "recent observations of arroyo toads and eggs" in the vicinity of the San Francisquito Creek confluence (70 FR 19562–19633).

As noted above, a small number of tadpoles and no adult or subadult arroyo toads have been detected in the Project area during multiple survey efforts conducted over more than a decade. Based on these survey results, a breeding population of arroyo toad has not been detected in the Project area. However, given the presence of upstream populations of arroyo toad, the fact that tadpoles have been observed in the eastern portion of the Project area (within the Santa Clara River), and the presence of high-quality habitat throughout the reaches of the Santa Clara River and Castaic Creek on the Project site, there is potential for a small breeding population of arroyo toad to occur in the portions of the Santa Clara River and Castaic Creek in the Project area as well as in adjacent riparian and upland habitats.

Suitable arroyo toad habitat mapped by Impact Sciences (2002) will be used for the purpose of this impact analysis. Impact Sciences conducted a habitat quality assessment for the arroyo toad along and adjacent to the Santa Clara River floodplain and adjacent uplands within the Project area. Upland areas within 500 meters (1,640 feet) on either side of arroyo toad protocol survey zones were included in the habitat evaluation, but with SR-126 set as the northern boundary where less than 500 meters of upland habitat was present between the riparian zone and the roadway (*i.e.*, suitable habitat did not extend north of SR-126). Within each reach, the total area was divided into "within riverbanks" and "outside riverbanks" zones. The two zones were

evaluated for their support of primary constituent elements identified in the critical habitat designation for the arroyo toad (70 FR 19562).

1. Rivers or streams with hydrologic regimes that supply water to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads;

2. Low-gradient streams (less than 6% slope) with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles;

3. A natural flooding regime, or one sufficiently corresponding to a natural regime, that will periodically scour riparian vegetation, rework stream channels and terraces, and redistribute sands and sediments, such that breeding pools and terrace habitats with scattered vegetation are maintained;

4. Riparian and adjacent upland habitats (*e.g.*, alluvial scrub, coastal scrub, chaparral, and oak woodlands, but particularly alluvial streamside terraces and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground) to provide foraging, aestivation, and living areas for subadult and adult arroyo toads; and

5. Stream channels and adjacent upland habitats that allow for migration to foraging areas, overwintering sites, dispersal between populations, and recolonization of areas that contain suitable habitat.

For the purpose of this analysis, "Category 1" habitats are defined as habitats that are capable of supporting all life history phases. In the Project area, Category 1 habitat falls primarily within the 100-year floodplain. "Category 2" habitats may support some phases of the arroyo toad's life history, such as foraging and aestivation/hibernation, but do not generally support adequate hydrology for breeding. Habitats missing two or more elements, especially where the hydrologic regime is absent, are defined as "Category 3" habitat. Category 3 habitat would be limited to supporting aestivation/hibernation, dispersal, and foraging. Category 3 habitat primarily includes upland areas, including agriculture, outside the Santa Clara River floodplain.

The habitat quality assessment identified 1,931 acres of suitable habitat for the arroyo toad within the Project area, including 797 acres of Category 1 habitat, 76 acres of Category 2 habitat, and 1,058 acres of Category 3 habitat (**Figure 4.5-47**, Arroyo Toad Habitat).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the permanent loss of 159 acres (8.2%) of "suitable" habitat (including Category 1, Category 2, and Category 3 habitat) and temporary impacts to 118 acres (**Figure 4.5-48**, Alternative 2 Impacts to Arroyo Toad). The loss of these habitats would be as follows:

- Category 1 habitat – 52 acres (6.5%) of permanent loss and 65 acres of temporary loss;
- Category 2 habitat – 14 acres (18.7%) of permanent loss and 9.7 acres of temporary loss; and
- Category 3 habitat – 93 acres (8.8%) of permanent loss and 43 acres of temporary loss.

Arroyo toad tadpoles have been documented on the Project area, although no adults or subadult arroyo toads have been observed in the Project area. However, for the purposes of this analysis it is assumed that the Project area supports a small population of arroyo toads. Given the endangered status of the species and sporadic occurrence within the Santa Clara River and its tributaries, if adults or subadults were present at the time of impacts, the permanent and temporary loss of suitable habitat through implementation of the RMDP SCP would have a substantial direct adverse effect on this species; could interfere substantially with the movement of the species or impede the use of nursery sites; would have the potential to substantially reduce the habitat of the species on site or rangewide; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 629 acres (32.6%) of suitable habitat (**Figure 4.5-48**, Alternative 2 Impacts to Arroyo Toad). The loss of Category 1, Category 2, and Category 3 habitat would be as follows:

- Category 1 habitat – 7.0 acres (0.9%) of permanent loss;
- Category 2 habitat – 11 acres (13.9%) of permanent loss; and
- Category 3 habitat – 612 acres (57.8%) of permanent loss.

A high amount and percentage of suitable habitat for the arroyo toad, albeit mostly Category 3 habitat (*i.e.*, upland aestivation/hibernation, dispersal, and foraging), would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. Category 3 habitat provides refugia from severe flooding, and would reduce the potential for animals using this area to be washed downstream. This loss of habitat could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable arroyo toad habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 788 acres (40.8%). The loss of Category 1, Category 2, and Category 3 habitat would be as follows:

- Category 1 habitat – 59 acres (7.4%) of permanent loss;
- Category 2 habitat – 25 acres (32.6%) of permanent loss; and
- Category 3 habitat – 705 acres (66.6%) of permanent loss.

Because of the large amount and percentage of suitable habitat loss, including substantial acreage of Category 3 habitat that could provide dry refuge during severe flood events, the combined direct and indirect permanent impacts to suitable arroyo toad habitat could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below

self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Although the Project area supports suitable habitat for arroyo toad, only a few tadpoles and no adult or subadult arroyo toads have been observed during multiple survey efforts conducted over more than a decade. Based on these survey results, a breeding population of arroyo toad was not detected in the Project area. However, given the presence of upstream populations of arroyo toad, the fact that tadpoles have been observed in the eastern portion of the Project area, and the presence of suitable habitat, a breeding population of the arroyo toad could be present in the Santa Clara River and Castaic Creek within the Project area as well as in surrounding riparian and upland habitats. The implementation of the RMDP would include the construction of bridges and bank stabilization within areas containing Category 1 arroyo toad habitat. Other construction activities would occur in areas containing Category 2 and Category 3 habitat. Should arroyo toad adults, subadults, tadpoles, or egg masses be present within the disturbance footprint, these activities could result in injury or mortality of arroyo toad individuals due to direct contact with construction equipment, entombment in burrows, and disturbances to aquatic breeding sites that could disturb egg masses and tadpoles. Implementation of the SCP would not directly impact this species.

Given its rarity in the Project region and its status as a federally listed endangered species, the loss of any arroyo toad adults, subadults, tadpoles, or egg masses could have a substantial direct adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The types of potential indirect permanent impacts to individuals would be the same as described above for direct impacts to individuals. However, because the build-out of the Specific Plan, VCC, and Entrada planning areas would result in substantially greater permanent impacts to upland habitats potentially occupied by arroyo toad adults and subadults, the risk of impacts to toads using these habitats for foraging and aestivation is

higher than for implementation of the RMDP. Should arroyo toad adults, subadults, tadpoles, or egg masses be present within the disturbance footprint, these activities could result in injury or mortality of arroyo toads.

Given its rarity in the Project region and its status as a federally listed endangered species, the loss of arroyo toad adults, juveniles, tadpoles, or egg masses could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect arroyo toads in the short term in areas adjacent to or downstream of construction zones. Construction activities could cause ground vibration that may disturb burrows or alter the arroyo toad's behavior, possibly causing them to emerge from burrows and increasing their risk of exposure, predation, and vehicle collisions. Grading activities could result in the dispersion of sediments and pollutants from upland portions of the site into downstream areas of the Santa Clara River. Hydrologic and water quality impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. Construction-related dust could also adversely affect water quality and prey species. These impacts could disturb on-site and downstream habitat quality and disrupt breeding activities. Trash may attract predators of arroyo toads, such as crows and ravens.

In the long term, use of RMDP facilities, such as bridges over the Santa Clara River, and the proximity of urban development to potential arroyo toad habitat could result in disruption of nocturnal activities and greater vulnerability to predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators (see Crooks and Soulé 1999); collecting by children; degradation of habitat from increased human use (*e.g.*, trampling, trash, and off-road vehicles) and altered fire regimes (likely too frequent fire); invasion by exotic plant (*e.g.*, giant reed, tamarisk, and pampas grass) and wildlife species (*e.g.*, Argentine ants, bullfrogs, African clawed frogs, exotic fish, and crayfish); use of pesticides; and increased risk of roadkill on roads adjacent to occupied areas. In addition, grazing in or adjacent to tributaries or surrounding uplands could result in crushing or entombment in burrows.

Both the short-term and long-term secondary impacts could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of

nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct and indirect secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP under Alternatives 3 through 7 would result in the following direct permanent and temporary impacts to suitable habitat for the arroyo toad (**Figures 4.5-49** through **4.5-53**, Alternatives 3 through 7 Impacts to Arroyo Toad):

- Alternative 3 – 112 acres (5.8%) of permanent loss and 140 acres of temporary loss;
  - Category 1 habitat – 30 acres (3.8%) of permanent loss and 65 acres of temporary loss;
  - Category 2 habitat – 11 acres (14.0%) of permanent loss and 13 acres of temporary loss;
  - Category 3 habitat – 71 acres (6.7%) of permanent loss and 62 acres of temporary loss;
- Alternative 4 – 112 acres (5.8%) of permanent loss and 140 acres of temporary loss;
  - Category 1habitat – 30 acres (3.8%) of permanent loss and 65 acres of temporary loss;
  - Category 2 habitat – 11 acres (14.0%) of permanent loss and 13 acres of temporary loss;
  - Category 3 habitat – 71 acres (6.7%) of permanent loss and 62 acres of temporary loss;
- Alternative 5 – 147 acres (7.6%) of permanent loss and 127 acres of temporary loss;
  - Category 1 habitat – 38 acres (4.8%) of permanent loss and 69 acres of temporary loss;
  - Category 2 habitat – 14 acres (18.0%) of permanent loss and 9.5 acres of temporary loss;

  - Category 3 habitat – 95 acres (9.0%) of permanent loss and 49 acres of temporary loss;
- Alternative 6 – 83 acres (4.3%) of permanent loss and 139 acres of temporary loss;
  - Category 1 habitat – 30 acres (3.7%) of permanent loss and 64 acres of temporary loss;
  - Category 2 habitat – 6.4 acres (8.5%) of permanent loss and 13 acres of temporary loss;
  - Category 3 habitat – 47 acres (4.4%) of permanent loss and 62 acres of temporary loss;
- Alternative 7 – 49 acres (2.6%) of permanent loss and 299 acres of temporary loss;
  - Category 1 habitat – 9.0 acres (1.1%) of permanent loss and 56 acres of temporary loss;
  - Category 2 habitat – 4.0 acres (5.3%) of permanent loss and 12 acres of temporary loss; and
  - Category 3 habitat – 36 acres (3.4%) of permanent loss and 232 acres of temporary loss.

Compared to Alternative 2, which would result in an overall total of 159 acres (8.2%) of permanent loss and 118 acres of temporary impacts to suitable habitat, the overall direct permanent impacts to suitable arroyo toad habitat under Alternatives 3 through 6 would range from marginally reduced (Alternative 5), to somewhat reduced (Alternatives 3 and 4), to substantially reduced (Alternatives 6 and 7). The large reduction in permanent loss of habitat under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River. Temporary impacts under Alternatives 3 through 6 would be somewhat increased compared to Alternative 2 and substantially increased under Alternative 7 compared to the other alternatives.

With regard to Category 1, Category 2, and Category 3 habitat, Alternative 2 would have a relatively greater impact on Category 1 habitat, with a 6.5% permanent loss compared to a range of 1.1% (Alternative 7) to 4.8% (Alternative 5) for the other alternatives. For Category 2 and Category 3 habitat, permanent loss under Alternatives 3, 4, and 5 would be similar to Alternative 2, which would have 93 acres (8.8%) of permanent loss of Category 3 habitat and 14 acres (18.7%) of permanent loss of Category 2 habitat. Alternatives 6 and 7 would have substantially reduced permanent loss of Category 2 and Category 3 habitat compared to the other alternatives. Because of the pullback of RMDP

facilities from the Santa Clara River, Alternative 7 would have the least amount of impacts to Category 1, Category 2, and Category 3 habitat.

Temporary impacts to suitable habitat for the arroyo toad have similar levels of both overall impact and breakdowns for the different quality ratings for Alternatives 3 through 6 compared to Alternative 2. Alternative 7 would have somewhat reduced temporary impacts to Category 1 habitat, similar impacts to Category 2 habitat, and substantially greater impacts to Category 3 habitat compared to Alternatives 2 through 6.

The overall permanent loss of habitat and temporary impacts from implementation of the RMDP and the SCP under Alternatives 3 through 6 are reduced or similar in magnitude compared to Alternative 2, and permanent impacts are substantially reduced under Alternative 7 (albeit substantially increased for Category 3 habitat). However, because the arroyo toad is a listed endangered species and occurs sporadically in the Santa Clara River and its tributaries, any loss of occupied habitat would have a substantial adverse effect on this species. If adults or subadults were present when construction was initiated, the loss of permanent and temporary loss of habitat would be significant, absent mitigation, for Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the arroyo toad (**Figures 4.5-49** through **4.5-53**, Alternatives 3 through 7 Impacts to Arroyo Toad):

- Alternative 3 – 625 acres (32.4%) of permanent loss;
  - Category 1 habitat – 6.9 acres (0.9%) of permanent loss;
  - Category 2 habitat – 10 acres (13.8%) of permanent loss;
  - Category 3 habitat – 607 acres (57.4%) of permanent loss;
- Alternative 4 – 624 acres (32.3%) of permanent loss;
  - Category 1 habitat – 6.9 acres (0.9%) of permanent loss;
  - Category 2 habitat – 10 acres (13.8%) of permanent loss;
  - Category 3 – 607 acres (57.4%) of permanent loss;
- Alternative 5 – 613 acres (31.8%) of permanent loss;
  - Category 1 habitat – 7.3 acres (0.9%) of permanent loss;
  - Category 2 habitat – 11 acres (14.3%) of permanent loss;
  - Category 3 –595 acres (56.2%) of permanent loss;

- Alternative 6 – 502 acres (26.0%) of permanent loss;
  - Category 1 habitat – 6.7 acres (0.8%) of permanent loss;
  - Category 2 habitat – 4.2 acres (5.6%) of permanent loss;
  - Category 3 habitat – 492 acres (46.5%) of permanent loss;
- Alternative 7 – 311 acres (16.1%) of permanent loss;
  - Category 1 habitat – 0.2 acre (0.03%) of permanent loss;
  - Category 2 habitat – 4.7 acres (6.2%) of permanent loss; and
  - Category 3 habitat – 306 acres (28.9%) of permanent loss.

For overall indirect permanent loss of potential arroyo toad habitat, Alternatives 3 through 5 would not be substantially different compared to Alternative 2, which would result in a total of 629 acres (32.6%) of permanent loss. Both Alternatives 6 and Alternative 7 would have substantially reduced impacts. Alternative 7 would have the least impact by far because of the pullback from the Santa Clara River and avoidance of some agricultural areas adjacent to the River that would be impacted under the other alternatives.

With regard to indirect permanent loss of Category 1 and Category 2 habitat, impacts under Alternatives 3 through 6 would be similar to Alternative 2, which would have a permanent loss of 11 acres (13.9%) of Category 2 habitat and 7.0 acres (0.9%) of Category 1 habitat. Alternative 7 would have substantially reduced impacts to Category 3 and Category 2 habitat compared to the other alternatives. For Category 3 habitat, compared to Alternative 2 which would have 612 acres (57.8%) of permanent loss, Alternatives 3, 4, and 5 would have marginally reduced impacts, Alternative 6 would have somewhat reduced impacts, and Alternative 7 would have substantially reduced impacts.

Although indirect permanent impacts to suitable habitat would be reduced under Alternatives 3 through 7, they would still be substantially adverse because of the relatively large amount and percentage of suitable habitat lost on site (16.1% under Alternative 7 to 32.4% under Alternative 3). Although the large majority of the habitat permanently lost is Category 3 habitat, this habitat may be important as dry refugia during severe flood events. Therefore, the indirect permanent impacts to suitable habitat for the arroyo toad occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the arroyo toad:

- Alternative 3 – 736 acres (38.2%) of permanent loss;
  - Category 1 habitat – 37 acres (4.6%) of permanent loss;
  - Category 2 habitat – 21 acres (27.8%) of permanent loss;
  - Category 3 habitat – 678 acres (64.1%) of permanent loss;
- Alternative 4 – 736 acres (38.2%) of permanent loss;
  - Category 1 habitat – 37 acres (4.6%) of permanent loss;
  - Category 2 habitat – 21 acres (27.8%) of permanent loss;
  - Category 3 habitat – 678 acres (64.1%) of permanent loss;
- Alternative 5 – 760 acres (39.4%) of permanent loss;
  - Category 1 habitat – 45 acres (5.7%) of permanent loss;
  - Category 2 habitat – 24 acres (32.3%) of permanent loss;
  - Category 3 habitat – 690 acres (65.2%) of permanent loss;
- Alternative 6 – 585 acres (30.3%) of permanent loss;
  - Category 1 habitat – 37 acres (4.6%) of permanent loss;
  - Category 2 habitat – 11 acres (14.0%) of permanent loss;
  - Category 3 habitat – 538 acres (50.9%) of permanent loss;
- Alternative 7 – 360 acres (18.7%) of permanent loss;
  - Category 1 habitat – 9.2 acres (1.2%) of permanent loss;
  - Category 2 habitat – 8.7 acres (11.5%) of permanent loss; and
  - Category 3 habitat – 342 acres (32.3%) of permanent loss.

For overall combined direct and indirect permanent loss of suitable arroyo toad habitat, Alternatives 3 through 5 would be somewhat reduced compared to Alternative 2, which would result in a total of 788 acres (40.8%) of permanent loss. Alternatives 6 and 7 would have substantially reduced impacts and Alternative 7 would have the least impact by far because of the pullback of RMDP facilities from the Santa Clara River and avoidance of some agricultural areas adjacent to the River that would be impacted under the other alternatives.

For Category 1 habitat, compared to Alternative 2, which would have 59 acres (7.4%) of permanent loss, Alternatives 3 through 7 would have somewhat reduced impacts and Alternative 7 would have substantially reduced impacts. For Category 2 habitat, compared to Alternative 2 which would have 25 acres (32.6%) of permanent loss, Alternatives 3, 4, and 5 would have marginally reduced impacts, Alternative 6 would have somewhat reduced impacts, and Alternative 7 would have substantially reduced impacts. For Category 3 habitat, compared to Alternative 2 which would have 705 acres (66.6%) of permanent loss, Alternatives 3, 4, and 5 would have marginally reduced impacts, Alternative 6 would have somewhat reduced impacts, and Alternative 7 would have substantially reduced impacts.

Although Alternatives 3 through 7 would have reduced permanent loss of suitable habitat compared to Alternative 2, the combined direct and indirect impacts would still be substantially adverse under Alternatives 3 through 7 because of the relatively large percentage of potential habitat lost on site (including Category 3 habitat that may be used as dry refugia during severe flood events) ranging from 18.7% under Alternative 7 to 39.4% under Alternative 5. Therefore, the combined direct and indirect permanent loss of suitable habitat for the arroyo toad occurring as a result of implementation of the RMDP and SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual arroyo toads as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Because of the pullback from the Santa Clara River and avoidance of large areas of agriculture under Alternative 7, the potential for impacts to individuals would be substantially reduced under Alternative 7 compared to the other alternatives. However, given its rarity in the Project region and its status as a federally listed endangered species, the loss of arroyo toad adults, juveniles, tadpoles, or egg masses could have a substantial adverse effect on this species. Therefore, impacts to individual arroyo toads occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada

planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term impacts from construction activities and long-term effects. Construction impacts could include dust, ground vibration, lighting, trash, and hydrologic and water quality impacts that could disturb on-site and downstream habitat quality and disrupt breeding activities. Potential long-term impacts include disruption of nocturnal activities and increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased predation by pet, stray, and feral cats and dogs as well as other mesopredators; collecting; habitat degradation by trampling, trash, off-road vehicles, and altered fire regimes; invasion by exotic plant and wildlife species; use of pesticides; and increased risk of roadkill on roads adjacent to occupied areas. In addition, grazing within or adjacent to tributaries could cause crushing or entombment in burrows.

Therefore, the loss or degradation of suitable habitat and impacts to individual arroyo toads due to short-term and long-term secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to arroyo toad: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals, including adults, juveniles, metamorphs, egg masses, and tadpoles, could occur during construction as a result of vegetation clearing and grading and construction activities in breeding pools, including injury and mortality due to direct contact with construction equipment, entombment of hibernating and aestivating individuals, and increased exposure of individuals flushed from burrows or left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area and within 1,000 feet of the construction zone and access road will be conducted by a qualified biologist in possession of a federal permit to capture and relocate arroyo toads. If detected, no work will be conducted within 500 feet of occupied habitat without concurrence of USFWS. A monitoring plan will prepared and implemented to protect the arroyo toad, if present, during construction in consultation with and approved by USFWS and CDFG. General procedures to avoid and minimize impacts to arroyo toad during construction will be implemented and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species. In addition, several general measures will be implemented to protect wetland habitats that would reduce effects on the arroyo toad. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment

operating in ponds or flowing water; design of bridges, culverts, and other structures so as not to impair the movement of aquatic species; and protection of water quality from mud, silt, and other pollutants.

The combined permanent loss of suitable habitat for the arroyo toad resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 360 acres (18.7%) under Alternative 7 to 788 acres (40.8%) under Alternative 2. For Category 1 arroyo toad habitat, impacts would range from 9.2 acres (1.2%) under Alternative 7 to 59 acres (7.4%) under Alternative 2. This would be a substantial loss of suitable habitat and would reduce the potential size and distribution of the arroyo toad population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in large areas of suitable habitat for this species being protected in the River Corridor SMA (**Figure 4.5-9**). The majority of Category 1 suitable habitat for the arroyo toad would ultimately be preserved under all the alternatives (preserved habitat includes Category 1 habitat that would not impacted or temporarily impacted and restored): 734 acres (92.1%) under Alternative 2, 760 acres (95.4%) under Alternatives 3 and 4, 751 acres (94.2%) under Alternative 5, 760 acres (95.4%) under Alternative 6, and 787 acres (98.8%) under Alternative 7. In addition, the Flood Hydraulics Impacts Assessment(PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. Following build-out, the River Corridor floodplain would remain 1,000 to 2,000 feet wide and retain the mosaic of habitats, including the relatively narrow wetted channel, benches, and dry terraces that would support the life history of the arroyo toad, including breeding, foraging, aestivation, hibernation, and dispersal.

Substantial dry refuge habitat would also be undeveloped under Alternatives 2 through 7, including adjacent uplands and agricultural areas. These areas include Category 3 habitat outside of the 100-year floodplain (**Figures 4.5-48** through **4.5-53**, Alternatives 2 through 7 Impacts to Arroyo Toad). These areas would be available as aestivation/hibernation, dispersal, and foraging area and would reduce the potential for adults and subadults using these areas to wash downstream during severe flood events. Under Alternative 2, 353 acres (33%) of a total of 1,058 existing acres, would be available, 379 acres (36%) would be available under Alternative 3, 380 acres (35.9%) would be available under Alternative 4, 368 acres (34.8%) would be available under Alternative 5, 519 acres (49%) would be available under Alternative 6, and 715 acres (67.6%) would be available under Alternative 7. Alternatives 6 and 7 would have substantially more Category 3 upland habitat available because of reduced impacts for Mission

Village under both alternatives and additional reduced permanent impacts for Landmark Village under Alternative 7 (**Figures 4.5-52** and **4.5-53**, Alternatives 6 and 7 Impacts to Arroyo Toad).

With respect to secondary effects, any arroyo toads occupying habitat in close proximity to construction zones may be disturbed by construction activities, including ground vibration, dust, and nighttime lighting. Ground vibration could cause toads to emerge from burrows and expose them to predators, adverse environmental conditions, and increase their chance of injury or mortality from construction equipment and vehicles. Lighting may increase their risk of predation from nocturnal predators and dust may adversely affect water quality and their insect prey. Potential breeding pools, including downstream pools, could be disturbed during construction by hydrological alterations and pollutants that impair water quality, thus adversely affecting egg masses and tadpoles. Unsecured trash could attract predators such as crows and ravens. Construction activities within 500 feet of occupied habitat will not be allowed without concurrence of USFWS and thus will help reduce the potential effects of noise, ground vibration, lighting, and dust. Specific dust suppression measures and the requirement that all lighting will be downcast away from habitat areas will also reduce dust and lighting impacts. Any arroyo toads detected emerging due to ground vibration will be relocated by a qualified biologist per the monitoring plan. Trash will be secured during construction activities to reduce the attraction of predators. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, to protect downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; lighting; invasive species, including Argentine ant and invasive plants such as giant reed; pet, stray, and feral cats and dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the open space–urban interface will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All mitigation measures for the arroyo toad are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-1 IMPACTS TO INDIVIDUALS – ARROYO TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified four mitigation measures that will avoid, minimize, or mitigate the loss of arroyo toad individuals.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. These mitigation measures will ensure that up-to-date information about the status of the arroyo toad in the Project area is available prior to commencement of construction activities because USFWS protocol surveys will be required in potential habitat areas. These mitigation measures also require the specification of project-specific mitigation measures to avoid and minimize or reduce impacts during construction through habitat restoration, replacement, or enhancement, or some alternative compensation. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect arroyo toad habitat and/or breeding populations.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce impacts to arroyo toad individuals during construction either through protecting individual toads or their habitat.

BIO-17 states that a qualified biologist shall conduct focused surveys for the arroyo toad prior to construction, within all construction sites and access roads with the riverbed and all riverbed areas within 1,000 feet of construction sites and access roads. If the arroyo toad is present, the applicant shall implement measures required by the USFWS Biological Opinion for arroyo toad that either supplement or supersede these measures.

The following three mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the arroyo toad and other semi-aquatic species.

BIO-46 states that, during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded arroyo toads.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 is a more generally applicable mitigation measure that specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts associated with the potential impacts to arroyo toad individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-2 LOSS OF HABITAT – ARROYO TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for the loss of suitable habitat for the arroyo toad. The mitigation measures primarily relate to the establishment and management of a large open space system, with a focus on the River Corridor SMA, which will provide adequate suitable aquatic and terrestrial habitat for the arroyo toad such that any future breeding population will persist in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which has the highest potential in the Project area to support breeding populations of the arroyo toad in the future. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to provide potential terrestrial habitat adjacent to the River floodplain and to lessen the impact of the development on the conserved area within the River Corridor SMA. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. Although the High Country SMA has relatively low potential to support breeding habitat for the toad because of a lack of adequate hydrology, drainages within this area could be used for overwintering. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional measures to mitigate for the loss of suitable habitat for the arroyo toad. These measures also address habitat restoration in the River Corridor SMA that will reduce impacts to any future arroyo toad breeding populations in the River Corridor.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of

success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the arroyo toad would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-3 SECONDARY IMPACTS – ARROYO TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate for both short-term and long-term secondary impacts to the arroyo toad resulting from implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas. These mitigation measures address potential impacts to arroyo toads and their habitat related to hydrology and water quality, ground vibration, nighttime lighting, inadvertent impacts outside designated construction zones, increased human activity, and cattle grazing.

In order to mitigate impacts from chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

To help mitigate inadvertent habitat impacts and ground vibration, SP-4.6-20 requires that all grading perimeters within the River Corridor SMA shall be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor. While this mitigation measure does not address the off-site effects of ground vibration resulting from construction in the designated construction zone, it does minimize inadvertent effects by limiting the work to the designated area.

In order to mitigate impacts from nighttime lighting, SP-4.6-56 requires that all lighting along perimeter areas be downcast luminaries with light patterns directed away from natural areas.

In order to mitigate impacts from increased short-term human activity, SP-4.6-53 and SP-4.6-59, described above, will be implemented.

Mitigation measures for impacts resulting from increased human activity and related use of RMDP facilities such as trails and long-term occupation of the Specific Plan, VCC, and Entrada planning areas include measures related to preservation and habitat management of the River Corridor SMA, including SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, and SP-4.6-63. These mitigation measures are summarized above.

In addition, impacts resulting from public use of the River Corridor SMA, including trampling and litter, will be controlled by SP-4.6-17, which states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-24 also restricts recreational use to the established trail system.

To control cattle grazing, SP-4.6-12 states that grazing shall be removed from the River Corridor SMA except as permitted as a long-term resource management activity, SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture, and SP-4.6-27 requires removal of grazing from the High Country SMA except for long-term resource management.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures that address potential short-term and long-term secondary effects to the arroyo toad, including construction-related impacts such as noise and ground vibration; lighting; inadvertent loss of habitat; introduction of disease; attraction of predators (*e.g.,* crows and ravens); hydrology and water quality; fugitive dust; increased human activity; pet, stray, and feral cats and dogs; invasive plant and animal species; and use of pesticides.

BIO-17, as described in detail above, will reduce construction-related secondary impacts such as noise, ground vibration, lighting, and inadvertent impacts to habitat by not allowing work within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. Occupied habitat will be fenced to prevent equipment and vehicles from straying outside the designated construction zone. All trash will be secured so as not to attract predators to the construction area. The monitoring biologist(s) will follow the fieldwork code of practices developed by the Declining Amphibian Populations Task Force to ensure that diseases are not introduced to the construction area and surrounding habitat. The applicant shall implement measures required by the USFWS Biological Opinion for arroyo toad that either supplement or supersede these measures.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and

BIO-70, as summarized above, will be implemented. In addition, BIO-44, BIO-45, BIO-47, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for arroyo toad during construction.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 describes preparation of a plan and mitigation measures to be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to the arroyo toad. The plan will provide guidelines for collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

In order to mitigate impacts from human activity (short term and long term), collection, and pet, stray, and feral cats and dogs and other mesopredators, BIO-1 through BIO-16, as summarized above, will be implemented. In addition, BIO-19 through BIO-21, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural

undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated. BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, fire ecology, erosion, drought, or unforeseen events. These three mitigation measure provide additional potential upland habitat for the arroyo toad that will be protected from adverse effects associated with an increased human population in the region.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of suitable breeding habitat by pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all River Corridor SMA trails to minimize impacts to protect vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-80, BIO-85, and BIO-87 will mitigate impacts from non-native invasive plant and animal species that could degrade arroyo toad habitat and directly affect individuals, including adults, juveniles, tadpoles, and egg masses.

BIO-72 specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to arroyo toad and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

CALIFORNIA RED-LEGGED FROG (FT, CSC)

Life History

The California red-legged frog (*Rana draytonii*)[1] formerly occurred from Shasta County to Baja California, west of the mountains. It also occurred historically on a few desert slopes in the western Mojave and Colorado deserts. According to the USFWS (61 FR 25813–25833), the species has been extirpated from 70% of its former range and is now found primarily in wetlands and streams in coastal drainages of central California from Marin County to Ventura County. It has been all but eradicated from California's inland regions, including the foothills of the Sierra Nevada and coastal areas south of Ventura County (Jennings and Hayes 1994). The species occurs, or once occurred, at elevations ranging from sea level to 4,900 feet (1,500 meters) AMSL.

Breeding occurs in streams, deep pools, backwaters within streams and creeks, ponds, marshes, sag ponds, dune ponds, lagoons, and stock ponds. Red-legged frogs can occur in ephemeral ponds or permanent streams and ponds; however, populations probably cannot persist in ephemeral streams (Jennings and Hayes 1985). The species generally avoids large river channels with widely fluctuating flows because such habitat does not permit successful reproductive activity (Hayes and Jennings 1988). Breeding adults are often associated with deep still or slow-moving water and dense, shrubby riparian or emergent vegetation (Hayes and Jennings 1988), but frogs have been observed in shallow sections of streams and ponds that are devoid of vegetative cover. Habitats with the highest densities of frogs are deep water ponds with dense stands of overhanging willows (*Salix* sp.) and a fringe of cattails (*Typha latifolia*) between the willow roots and overhanging willow limbs (Jennings 1988; Rathbun *et al.* 1993). The species breeds during the winter and early spring from as early as late November through April and May. Larvae remain in breeding ponds until metamorphosis in the summer months (Storer 1925; Wright and Wright 1949). There is no evidence to suggest that they lay more than one clutch per year like some eastern ranids (Emlen 1977).

Hayes and Tennant (1985) found that most frequent prey groups for adult red-legged frogs were carabid and tenebrionid beetles, water striders (Gerridae), lycosid spiders, and larval neuropterans. Tadpoles probably feed on algae (Jennings *et al.* 1992). Small vertebrates such as Pacific tree frogs (*Pseudacris regilla*) and California mouse (*Peromyscus californicus*) comprised more than 50% of the prey mass taken by larger frogs and were the largest prey items in the Hayes and Tennant (1985) study.

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[1] The Schaffer *et al.* (2004) genetics study determined that *R. aurora* actually consists of two species, *R. aurora* and *R. draytonii*, whose ranges overlap only in a narrow zone in Mendocino County. *R. aurora* is found to be closely related to *R. cascadae*. Other studies, including an analysis of vocal sacs, have supported separate species status, concluding that *R. aurora* and *R. draytonii* are biologically quite different.

This semi-aquatic species also utilizes non-aquatic habitats for refuge and dispersal. It rests and feeds in riparian vegetation and the moisture and cover of the riparian zone may facilitate dispersal. In non-aquatic habitats, dispersal may be more limited; however, this species has been documented to disperse over a mile under certain conditions. Species has also been documented dispersing through areas with sparse vegetative cover and dispersal patterns are considered to be dependent on habitat availability and environmental conditions (Scott and Rathbun *in litt.* 1998). During periods when water is absent, red-legged frogs may take refuge in moist areas within riparian habitats and small mammal burrows in surrounding upland areas. It may aestivate in small mammal burrows and moist leaf litter up to 98 feet (30 meters) from water in adjacent dense riparian vegetation for up to 77 days (Rathbun *et al.* 1993).

Critical Habitat

On April 13, 2006, critical habitat was designated for the California red-legged frog (71 FR 19244–19346). The only critical habitat unit in Los Angeles County is the 4,321-acre San Francisquito Creek (LOS-1) Unit. This unit is located approximately five miles northeast of the Project area. Three critical habitat units have been designated in Ventura County, including the 6,660-acre Matilija Creek (VEN-1) Unit, the 2,915-acre San Antonio Creek (VEN-2) Unit, and the 8,837-acre Piru Creek (VEN-3) Unit; the closest of these units (Piru Creek) is located approximately seven miles north of the Project area. No designated critical habitat units for the California red-legged frog include any portion of the Project site.

Recovery Plan

The Recovery Plan for the Red-legged Frog (*Rana aurora draytonii*) was published by the USFWS on May 28, 2002 (USFWS 2002D). The recovery strategy for the California red-legged frog consists of four parts: (1) protect existing populations by reducing threats; (2) restore and create habitat that will be protected and managed in perpetuity; (3) survey and monitor populations and conduct research on the biology of and threats to the subspecies; and (4) reestablish populations of the subspecies within its historical range. Therefore, critical habitat is not further addressed in the analysis for the California red-legged frog in this EIS/EIR.

The Santa Clara River Watershed is included in Recovery Unit 7: Northern Transverse Range and Tehachapi Mountains (USFWS 2002D). A goal of the Recovery Plan is to protect the viability of existing populations of the red-legged frog in the recovery units, but recovery actions will focus on identified core areas within the recovery unit that were chosen because they represent viable populations or because they will contribute to habitat connectivity and increase dispersal opportunities. Recovery and delisting will depend on meeting the recovery criteria in all core areas. In Recovery Unit 7, a core area is identified as the Ventura River–Santa Clara River. However, the portion of the Santa Clara River within the Project area is not in the core area and is not directly identified in the Recovery Plan as having a conservation role in the

recovery strategy for the species (USFWS 2002D). Therefore, the Recovery Plan is not further addressed in the analysis for the California red-legged frog in this EIS/EIR.

Threats

Habitat loss and degradation have been primary factors in the decline of the California red-legged frog. Other factors contributing to declining California red-legged frog populations, directly related to urban development, include the introduction and spread of exotic predators (*e.g.*, bullfrog, African clawed-frog, green sunfish, and crayfish) and increases in mesopredators (*e.g.*, raccoons, skunks, and opossums) (Jennings 1988; Jennings and Hayes 1985; Moyle *et al.* 1986; Hayes and Jennings 1986). Additionally, water pollution, in the form of fertilizers, biocides, chlorine, and other pollutants, adversely affect amphibian development, survival, and habitat. Further, exotic plant species (*e.g.*, tamarisk, giant reed, iceplant, and pampas grass) may also degrade California red-legged frog habitat by contributing to altered hydrology, eliminating breeding pools, and restricting access to and quality of upland habitat. Other factors that may adversely affect the species include livestock grazing and recreational activities in riparian areas, and human-related increases in fire frequency (Jennings 1988).

Survey Results

The California red-legged frog has not been observed in the Project area, and conditions generally do not support suitable breeding habitat. If present, California red-legged frogs would be most likely to occur within the following vegetation communities/habitats in the Project area: open water, bulrush–cattail wetland, alluvial scrub, coastal and valley freshwater marsh, southern cottonwood–willow riparian forest, southern willow scrub, river wash, southern coast live oak riparian forest, and tamarisk scrub. Given the intensity of the arroyo toad and other survey efforts, California red-legged frogs would likely have been observed if they occurred within the portion of the Santa Clara River on or near the Project site. While there are no records of California red-legged frog from the Project site in the numerous wildlife surveys conducted since 1992, the species is known in the Project region from verified records upstream and downstream of the Project area. The Project area is within the potential distribution of the California red-legged frog along the Santa Clara River. However, as noted by San Marino Environmental Associates (SMEA 1995A), it probably has a low probability of colonizing the site because of the relatively long distances to extant upstream and downstream locations and of its apparent limited dispersal capabilities. The only critical habitat unit upstream is the San Francisquito Creek (LOS-1) Unit, which is located approximately five miles northeast of the Project area. This distance, coupled with the existing stream conditions in San Francisquito Creek (*i.e.*, dry gaps, absence of flowing water during most of the year), likely limit the potential for this species to disperse through this area.

Potential breeding or summer habitat for the California red-legged frog is absent from the main channel of the Santa Clara River within the eastern portion of the Project site (ENTRIX 2006A,

2006B). California red-legged frogs generally avoid large river channels with widely fluctuating flows, because such habitat usually does not permit reproductive activity (Hayes and Jennings 1988). For example, episodic winter flooding typical of the Santa Clara River may dislodge egg masses. Further, fluctuating water levels before summer typical of the Santa Clara River could kill tadpoles before they could metamorphose. Given these characteristics, other portions of the Santa Clara River within the Project area are also not expected to provide breeding habitat for the species. However, during the late winter and autumn, when California red-legged frogs are most likely to move randomly (USFWS 2002A), the Santa Clara River channel may provide dispersal habitat in the unlikely event that red-legged frogs are present in the Project area. Suitable breeding habitat may exist in some of the small tributaries (such as Salt Creek, Potrero Canyon, and Ayers Canyon) that flow north into the Santa Clara River, within and near the Project boundaries (ENTRIX 2006A). Additionally, Middle Canyon Spring contains relatively deep water in small isolated areas, and could serve as habitat for the California red-legged frog, but this species has not been detected. However, for the purposes of the EIS/EIR impact analysis, it is assumed that the red-legged frog could occur on site. California red-legged frogs are assumed to be present in the following plant communities in the Project area: alluvial scrub, bulrush–cattail wetland, coastal and valley freshwater marsh, river wash, southern coast live oak riparian forest, southern willow scrub, and shrub tamarisk. A total of 785 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the permanent loss of 62 acres (7.9%) of suitable habitat for California red-legged frog and temporary impacts to 83 acres (**Figure 4.5-54,** Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). Middle Canyon Spring would not be directly affected by the implementation of the RMDP, and the structures to be placed within the River corridor (*i.e.*, bridges and bank stabilization) would not prevent the use of the River corridor by dispersing frogs.

Although a small amount of potential habitat for the California red-legged frog would be permanently lost, and the species has not been documented on site, because this species is becoming increasingly rare, if the species were to occur on site in the future, this habitat loss due to implementation of the RMDP and the SCP could have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 43 acres (5.5%) of potential habitat (**Figure 4.5-54,** Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). Middle Canyon Spring would not be affected by the build-out of the Specific Plan area, and the structures to be placed within the River corridor (*i.e.*, bridges and bank stabilization) would not prevent the use of the River corridor by dispersing frogs.

Although a small amount of potential habitat for the California red-legged frog would be permanently lost, and the species has not been documented on site, because this species is becoming increasingly rare, if the species were to occur on site in the future, this habitat loss due to the build-out of the Specific Plan, VCC, and Entrada planning areas could have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of potential California red-legged frog habitat resulting from implementation of the RMD and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 105 acres (13.4%).

Although a small amount of potential habitat for the California red-legged frog would be permanently lost, and the species has not been documented on site, because this species is becoming increasingly rare, if the species were to occur on site in the future, this combined habitat loss due to the implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could have a substantial adverse effect

on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The implementation of the RMDP would include the construction of bridges and bank stabilization within areas in which individual California red-legged frogs could occur (most likely during dispersal). Although the potential for impacts is considered very low, should California red-legged frog adults, subadults, tadpoles, or egg masses be present within the disturbance footprint, these activities could result in injury or mortality of California red-legged frog individuals due to direct contact with construction equipment, entombment in burrows, and disturbances to aquatic breeding sites that could disturb egg masses and tadpoles. Implementation of the SCP would not directly impact this species.

There is potential for the direct loss of California red-legged frogs to occur during RMDP-related construction activities. Given its rarity and its status as a federally listed species, the loss of any California red-legged frogs could have a substantial direct adverse effect on this species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

This species has not been detected in the Project area, and the California red-legged frog generally avoids large river channels with widely fluctuating flows because such habitat does not permit successful reproductive activity (Hayes and Jennings 1988). Therefore, the reach of the Santa Clara River in the Project area is not expected to support successful breeding by California red-legged frogs (ENTRIX 2006A, 2006B). The closest known occurrence of this species in the Santa Clara River watershed is located in San Francisquito Creek, approximately five miles northeast of the Project area. There is some potential for non-breeding frogs to occur within the River corridor but their presence is unlikely because of the habitat conditions within the River, the distance from known source populations, and the current barriers to dispersal. Additionally, there is limited potential that breeding and/or non-breeding frogs could occur within Middle Canyon Spring, tributaries that flow north into the Santa Clara River, or other ponded areas in the

Project area. The build-out of the Specific Plan, VCC, and Entrada planning areas would include construction in riparian and upland habitats potentially occupied by the California red-legged frog. Should individuals of the species be present within the disturbance footprint, these activities could result in injury or mortality of California red-legged frog individuals due to direct contact with construction equipment, entombment in burrows, and disturbances to aquatic breeding sites that could disturb egg masses and tadpoles. Therefore, there is potential for the loss of individual California red-legged frogs to occur. Given its rarity and its status as a federally listed species, the loss of California red-legged frogs could have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect California red-legged frogs in the short term in areas adjacent to or downstream of construction zones. Construction activities could result in dispersion of sediments and pollutants from construction sites into the Santa Clara River and affect potentially occurring California red-legged frogs. Hydrologic and water quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. Construction-related vibration could cause individuals to emerge from burrows and other refuge areas, and dust could adversely affect water quality and prey species. These factors could result in injury or mortality of California red-legged frogs and/or the degradation of habitat quality. Implementation of the SCP would not affect this species.

In the long term, use of RMDP facilities, such as bridges over the Santa Clara River, and the occupancy of the Specific Plan, VCC, and Entrada planning areas could result in adverse secondary impacts to California red-legged frogs (if present). Specifically, the proximity of urban development to potential California red-legged frog habitat could result in disruption of nocturnal activities and greater vulnerability to predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators; collecting by children; degradation of habitat from invasive plants (*e.g.*, giant reed, tamarisk, and pampas grass) and increased human use (*e.g.*, trampling, trash, and off-road vehicles) and altered fire regimes (likely too frequent fire); and invasion by exotic wildlife species (*e.g.*, Argentine ants, bullfrogs, African clawed frogs, exotic fish, and crayfish). In addition, grazing within the River Corridor SMA could cause habitat degradation. These secondary impacts could have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide;

cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to potential habitat for the California red-legged frog (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 45 acres (5.7%) of permanent loss and 86 acres of temporary loss;
- Alternative 4 – 47 acres (6.0%) of permanent loss and 78 acres of temporary loss;
- Alternative 5 – 50 acres (6.4%) of permanent loss and 93 acres of temporary loss;
- Alternative 6 – 34 acres (4.3%) of permanent loss and 83 acres of temporary loss; and
- Alternative 7 – 13 acres (1.6%) of permanent loss and 58 acres of temporary loss.

For overall direct impacts to potential California red-legged frog habitat, the combined permanent and temporary loss of habitat under Alternatives 3 through 6 would be reduced compared to Alternative 2, which would result in a total of 62 acres (7.9%) of permanent loss and 83 acres of temporary impacts to potential habitat. The substantially greater difference in permanent loss of habitat between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other reductions to the Project footprint under Alternative 7 that would reduce permanent impacts to suitable habitat for the California red-legged frog compared to the other alternatives. Temporary impacts would also be reduced under Alternative 7 compared to Alternative 2.

Although impacts would be reduced compared to Alternative 2 under Alternatives 3 through 6 and substantially reduced under Alternative 7, because this species is rare and federally listed as threatened, the direct permanent and temporary impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the California red-legged frog (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 36 acres (4.6%) of permanent loss;
- Alternative 4 – 19 acres (2.4%) of permanent loss;
- Alternative 5 – 16 acres (2.0%) of permanent loss;
- Alternative 6 – 9.0 acres (1.1%) of permanent loss; and
- Alternative 7 – 6.3 acres (0.8%) of permanent loss.

For overall indirect permanent loss of suitable California red-legged frog habitat, Alternatives 3 would be somewhat reduced and Alternatives 4 through 7 would be substantially reduced compared to Alternative 2, which would result in a total of 43 acres (5.5%) of permanent loss. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed and each would have successively smaller development footprints within the Specific Plan and/or Entrada planning areas. Alternative 7 would have the least impact because of the pullback from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the California red-legged frog compared to the other alternatives.

Alternatives 3 through 7 would have reduced indirect permanent impacts to suitable habitat for the California red-legged frog compared to Alternative 2. However, because this species is rare and federally listed as threatened, the indirect permanent impacts (Loss of Habitat) occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the California red-legged frog:

- Alternative 3 – 81 acres (10.3%) of permanent loss;
- Alternative 4 – 66 acres (8.4%) of permanent loss;

- Alternative 5 – 66 acres (8.4%) of permanent loss;
- Alternative 6 – 43 acres (5.5%) of permanent loss; and
- Alternative 7 – 19 acres (2.4%) of permanent loss;

Compared to Alternative 2, which would result in a total of 105 acres (13.4%) of combined direct and indirect permanent impacts, Alternatives 3 through 7 would have substantially reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed and each would have successive reductions in the development footprints in the Specific Plan and/or Entrada planning areas. Alternative 7 would have the least impact because of the pullback of RMDP facilities from the Santa Clara River and its tributaries and other reductions to the Project footprint under Alternative 7 that would result in reduced impacts to suitable habitat for the California red-legged frog compared to the other alternatives.

Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts to suitable habitat for the California red-legged frog compared to Alternative 2. However, because this species is rare and federally listed as threatened, the combined direct and indirect permanent impacts (Loss of Habitat) occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual California red-legged frogs as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. However, given its status as a federally listed threatened species, the loss of California red-legged frog adults, juveniles, tadpoles, or egg masses could have a substantial adverse effect on this species. Therefore, impacts to individual California red-legged frogs occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for

Alternative 2 because each alternative has similar short-term impacts from construction activities and long-term effects. Construction activities could result in hydrologic and water quality-related impacts that could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. Construction-related vibration could cause individuals to emerge from burrows and other refuge areas, and dust could adversely affect water quality and prey species. These factors could result in injury or mortality of California red-legged frogs and/or the degradation of habitat quality.

In the long term, the proximity of urban development to potential California red-legged frog habitat could result in disruption of nocturnal activities; increased predation by nocturnal predators as a result of nighttime lighting and by pet, stray, and feral cats; collecting by children; degradation of habitat from invasive plants and increased human use (*e.g.*, trampling, trash, and off-road vehicles) and altered fire regimes (likely too frequent fire); and invasion by exotic wildlife species (*e.g.*, Argentine ants, bullfrogs, African clawed frogs, exotic fish, and crayfish). In addition, grazing within the River Corridor SMA could cause habitat degradation.

Therefore, the loss or degradation of suitable habitat and impacts to individual California red-legged frogs due to short-term and long-term secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to California red-legged frog: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

This species has not been detected in the Project area, but has limited potential to occur. If present on site, impacts to individuals, including adults, juveniles, metamorphs, egg masses, and tadpoles, could occur during construction as a result of vegetation clearing and grading and construction activities in breeding pools, including injury and mortality due to direct contact with construction equipment, entombment of hibernating and aestivating individuals, and increased exposure of individuals flushed from burrows or left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area and within 1,000 feet of the construction zone and access road will be conducted by a qualified biologist. If detected, no work will be conducted within 500 feet of occupied habitat without concurrence of USFWS. A monitoring plan will prepared and implemented to protect the California red-legged frog, if present, during construction in consultation with and approved by USFWS and CDFG. General procedures included in the monitoring plan to avoid and minimize impacts to California red-legged frog during construction will be implemented, including construction personnel education

for measures to reduce impacts to California red-legged frog, determination of time periods or seasons when construction activities would have the least adverse impacts (*e.g.*, after dispersal), fencing of authorized work areas, daily clearance surveys prior to construction, and relocation of detected California red-legged frog individuals from fenced and unfenced areas to suitable habitat. Several general measures will be implemented to protect wetland habitats, including measures regarding hydrology and water quality, which will reduce impacts to the California red-legged frog. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment operating in ponds or flowing water; design of bridges, culverts, and other structures so as not to impair the movement of aquatic species; and protection of water quality from mud, silt, and other pollutants.

The combined permanent loss of suitable habitat for the California red-legged frog resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 19 acres (2.4%) under Alternative 7 to 105 acres (13.4%) under Alternative 2. Because this red-legged frog is rare and federally listed as threatened, this would be a substantial loss of suitable habitat and would reduce the potential size and distribution of any California red-legged frog populations in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in approximately 513 acres of suitable habitat for this species being protected in the River Corridor SMA. The Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. Conditions within the Santa Clara River would remain similar to baseline conditions, and this habitat is generally considered unsuitable to this species due to the general high level of scour and lack of breeding pools.

With respect to secondary effects, any California red-legged frogs occupying habitat in close proximity to construction zones may be disturbed by construction activities, including ground vibration, dust, and nighttime lighting. Ground vibration could cause frogs to emerge from burrows and expose them to predators and adverse environmental conditions, and increase their chance of injury or mortality from construction equipment and vehicles. Lighting may increase the risk of predation from nocturnal predators, and dust may adversely affect water quality and the insect prey of California red-legged frogs. Potential breeding pools, including downstream pools, could be disturbed during construction by hydrologic alterations and pollutants that impair water quality, thus adversely affecting egg masses and tadpoles. Unsecured trash could attract predators such as crows and ravens. Construction activities within 500 feet of occupied habitat will not be allowed without concurrence of USFWS and thus will help reduce the potential

effects of noise, ground vibration, lighting, and dust. Specific dust suppression measures and the requirement that all lighting will be downcast away from habitat areas will also reduce dust and lighting impacts. Any California red-legged frogs detected emerging due to ground vibration will be relocated by a qualified biologist per the monitoring plan. Trash will be secured during construction activities to reduce the attraction of predators. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, protection of downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; lighting invasive species, including Argentine ant and invasive plants such as giant reed; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the open space-urban interface will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to the extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All mitigation measures for the California red-legged frog are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-4 IMPACTS TO INDIVIDUALS – CALIFORNIA RED-LEGGED FROG

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified four mitigation measures that will avoid, minimize, or mitigate the loss of California red-legged frog individuals. These measures require pre-development surveys and permits for impacts that may affect California red-legged frogs and/or their habitat.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that are designed to reduce impacts to California red-legged frog individuals during construction.

BIO-18 states that a qualified biologist shall conduct focused surveys for the California red-legged frog prior to construction, within all construction sites and access roads with the riverbed and all riverbed areas within 1,000 feet of construction sites and access roads. If the California red-legged frog is present, the applicant shall implement measures required by the USFWS Biological Opinion for California red-legged frog that either supplement or supercede these measures.

The following three mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the California red-legged frog and other semi-aquatic species.

BIO-46 states that, during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded California red-legged frogs.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species

adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to California red-legged frog individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-5 LOSS OF HABITAT – CALIFORNIA RED-LEGGED FROG

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for the loss of suitable habitat for the California red-legged frog. The mitigation measures primarily relate to the establishment and management of a large open space system, with a focus on the River Corridor SMA, which will provide adequate suitable aquatic and terrestrial habitat for the California red-legged frog such that any dispersing individuals or future breeding population could use the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which has the highest potential in the Project area to support both dispersing individuals and breeding populations of the California red-legged frog in the future. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to provide potential terrestrial habitat adjacent to the River floodplain and to lessen the impact of the development on the conserved area within the River Corridor SMA. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. Although the High Country

SMA has relatively low potential to support breeding habitat for the California red-legged frog because of a lack of adequate hydrology, drainages within this area could be used for overwintering. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional measures to mitigate for the loss of suitable habitat for the California red-legged frog. These measures also address habitat restoration in the River Corridor SMA that will reduce impacts to any future California red-legged frog breeding populations in the River Corridor.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the California red-legged frog would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-6 SECONDARY IMPACTS – CALIFORNIA RED-LEGGED FROG

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate for both short-term and long-term secondary impacts to the California red-legged frog resulting from implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas. These mitigation measures address potential impacts to California red-legged frogs and their habitat related to hydrology and water quality, ground vibration, nighttime lighting, inadvertent impacts outside designated construction zones, increased human activity, and cattle grazing.

In order to mitigate impacts from chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

To help mitigate inadvertent habitat impacts and ground vibration, SP-4.6-20 requires that all grading perimeters within the River Corridor SMA shall be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor. While this mitigation measure does not address the off-site effects of ground vibration resulting from construction in the designated construction zone, it does minimize inadvertent effects by limiting the work to the designated area.

In order to mitigate impacts from nighttime lighting, SP-4.6-56 requires that all lighting along perimeter areas be downcast luminaries with light patterns directed away from natural areas.

In order to mitigate impacts from increased short-term human activity, SP-4.6-53 and SP-4.6-59, described above, will be implemented.

Mitigation measures for impacts resulting from increased human activity and related use of RMDP facilities such as trails and long-term occupation of the Specific Plan, VCC, and Entrada planning areas include measures related to preservation and habitat management of the River Corridor SMA, including SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, and SP-4.6-63. These mitigation measures are summarized above.

In addition, impacts resulting from public use of the River Corridor SMA, including trampling and litter, will be controlled by SP-4.6-17, which states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-24 also restricts recreational use to the established trail system.

To control cattle grazing, SP-4.6-12 states that grazing shall be removed from the River Corridor SMA except as permitted as a long-term resource management activity, SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture, and SP-4.6-27 requires removal of grazing from the High Country SMA except for long-term resource management.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures that address potential short-term and long-term secondary effects to the California red-legged frog, including construction-related impacts such as noise and ground vibration; lighting; inadvertent loss of habitat; introduction of disease; attraction of predators (*e.g.*, crows and ravens); hydrology and water quality; fugitive dust; increased human activity; pet, stray, and feral cats and dogs; invasive plant and animal species; and use of pesticides.

BIO-18 will reduce construction-related secondary impacts such as noise, ground vibration, lighting, and inadvertent impacts to habitat by not allowing work within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. Occupied habitat will be fenced to prevent equipment and vehicles from straying outside the designated construction zone. All trash will be secured so as not to attract predators to the construction area. The monitoring biologist(s) will follow the fieldwork code of practices developed by the Declining Amphibian Populations Task Force to ensure that diseases are not introduced to the construction area and surrounding habitat. The applicant shall implement measures required by the USFWS Biological Opinion for California red-legged frog that either supplement or supercede these measures.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and BIO-70, as summarized above, will be implemented. In addition, BIO-44, BIO-45, BIO-47, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS. In addition, BIO-45, BIO-74, and BIO-77 will be implemented.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for California red-legged frog during construction.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified

biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 requires preparation of a plan and measures to be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to the California red-legged frog. The plan will provide guidelines for collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

In order to mitigate impacts from human activity (short term and long term), collection, and pet, stray, and feral cats and dogs and other mesopredators, BIO-1 through BIO-16, as summarized above, will be implemented. In addition, BIO-19, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. This mitigation measure provides additional potential upland habitat for the California red-legged that will be protected from adverse effects associated with an increased human population in the region.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of suitable breeding habitat by pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-80, BIO-85 and BIO-87 will mitigate impacts from non-native invasive plant and animal species that could degrade California red-legged frog habitat and directly affect individuals, including adults, juveniles, tadpoles, and egg masses.

BIO-72 specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to California red-legged frog and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTHERN STEELHEAD (FE)

Life History

The southern steelhead (*Oncorhynchus mykiss*) was listed as endangered under the federal Endangered Species Act (ESA) on August 18, 1997. Southern steelhead and rainbow trout represent two life history patterns of the same species. The former represents anadromy and the latter represents freshwater residency. It is common to find populations exhibiting both life history strategies within the same river system. Fish that exhibit one life history strategy can produce offspring that exhibit the other strategy (62 FR 43937–43954). Southern steelhead are lightly to heavily spotted with small black spots on a lighter background; the dorsal, caudal, and adipose fins have these spots as well. Juvenile and larger freshwater resident fish have a red to pink stripe down the mid-sides, hence the name for the freshwater populations. The sea run fish are larger, lack the pink stripe, and present an overall silvery appearance with a "steely" blue-grey color dorsally. The inside of the mouth is entirely white in contrast to the other Pacific salmonid species, and they have a stronger tail stock and smaller anal fin than the other native Pacific salmon. The adipose fin separates them from all other native freshwater fish in anadromous streams in coastal southern California (Moyle 2002).

The range of the southern steelhead is from the Santa Maria River along the San Luis Obispo–Santa Barbara County line in the north to the Tijuana River just north of the United States–Mexico border in the south. Their historical range within many of these coastal streams was limited by natural barriers, above which no known southern California populations of native rainbow trout or steelhead previously existed. Definitive records of southern steelhead are not available for many of the small coastal streams within the Southern California Evolutionarily Significant Unit (ESU); however, it is believed that most of the streams were inhabited by southern steelhead. The distribution of southern steelhead within the ocean is not well known, but some evidence indicates that they remain relatively close to the coast and even near the mouths of their natal streams, which contrasts with other Pacific salmonid species that range widely in the ocean (NMFS 2007).

Within the last decade, the anadromous southern steelhead has been recorded in the following watersheds:

- Santa Barbara County – the Santa Maria River, Santa Ynez River, Gaviota Creek, Arroyo Honda, Mission Creek, and Carpinteria Creek;
- Ventura County – the Ventura River and Santa Clara River;
- Los Angeles County – Malibu Creek and Topanga Creek;
- Orange County – San Juan Creek; and
- San Diego County – San Mateo Creek.

Within the Santa Clara River drainage, southern steelhead historically inhabited Piru Creek, Sespe Creek, Santa Paula Creek, Hopper Creek, and possibly Pole Creek (Titus *et al.* n.d.). Presently, southern steelhead occur in the Santa Clara River Watershed in Piru Creek between the confluence with the Santa Clara River and Santa Felicia Dam, in Sespe Creek, in Santa Paula Creek, and possibly in Hopper and Pole Creeks (Stoeker and Kelly 2005). There is no historical record of steelhead use of the Santa Clara River or tributaries upstream of Piru Creek and the Dry Gap approximately five miles downstream of the Project area.

Migration and life history patterns of southern steelhead depend on rainfall and streamflow. In the highly variable conditions of the watersheds along the south central California coast, it is presumed to be common for one form to decline to extremely low numbers in some years. In most southern California streams, including the Santa Clara River, a sandbar is present at the mouth of the estuary during periods of low river flow that may block migration from the ocean. Adult steelhead congregate in the Pacific Ocean off the mouth of the River and migrate upstream after the sandbar is breached (Shapovalov and Taft 1954) from seasonal tidal influences and/or when triggered by rising streamflows from storm events (Moyle 2002).

Steelhead in the Santa Clara River are presumed to be adapted to utilize winter freshets (a rise or overflowing of a stream resulting from heavy rain or snow melt) as a means to move from the sea to the upper areas of the watershed. These winter freshets typically have provided enough surface flow to break through the sandbar that builds up at the River–estuary interface during the low flow summer months. In the Santa Ynez River, the majority of the upstream migration is believed to have occurred from January through March before the construction of Bradbury Dam (Shapovalov and Taft 1954). More recently, adult steelhead have been observed in the lower Santa Clara River and a subset of Ventura County tributaries in February, March, and early April (Puckett and Villa 1985; ENTRIX 1994, 1995, 1996, 1998, 1999).

Downstream migration of juveniles usually occurs between March and June (Shapovalov and Taft 1954). In southern California, steelhead typically migrate to the ocean as one- or two-year olds (Moore 1980; ENTRIX 1994, 1995, 1996). Outmigrating steelhead in the Santa Clara River have been observed from January through early June, but the majority of steelhead smolt emigrate during the period from March through early May, and the timing of migration is strongly dependent on streamflows (ENTRIX 2000).

Steelhead in the ocean feed on a variety of pelagic organisms, primarily anchovies and crustaceans. In streams, they overwhelmingly feed on aquatic insects in both the benthos and stream drift. They also consume non-insects, like amphipods, isopods, oligochaete worms, and terrestrial insects that fall into the stream, if available. Larger fish in freshwater streams will also take fish, such as sculpin, tidewater gobies, and small minnows and suckers. Larger juveniles in lagoons will feed on mysid shrimp, amphipods, and isopods in addition to a smaller variety of insects available in lagoons (Moyle 2002).

In streams, steelhead prefer habitat consisting of relatively cool, well-oxygenated water with adequate depth and cover. Temperature tolerances and preferences of steelhead vary among life stages. Eggs tend to experience mortality at temperatures in excess of 55° F (13.3° C) (McEwan and Jackson 1996). At temperatures greater than 70° F (21.1° C), steelhead appear to have difficulty obtaining sufficient oxygen from the water (McEwan and Jackson 1996). However, Carpanzano (1996) found trout living in Sespe Creek with a water temperature of 82.4º F (28º C). Cover in the way of gravel, cobble, boulder, undercut banks, large and small woody debris, and overhanging vegetation is important for survival.

Steelhead require relatively clean unconsolidated gravel and cobble for spawning. Females excavate oval nests and lay their eggs while one or more attending males fertilize the eggs as they fall among the gravel. Unlike other Pacific salmonid species, steelhead can survive the spawning activity and return to reproduce multiple times. The eggs hatch within three to four weeks, but the alevins (yolk-sac fry) cannot swim since they still have a large yolk attached. The alevins remain in the gravel for two additional weeks and then emerge from the gravel when their yolk is used up. At this point, the alevins become free swimming juveniles. The juveniles spend one to two years in freshwater and reach five to 10 inches in length before attempting to leave for the ocean (Moyle 2002). Fish that descend to larger river habitats or coastal lagoons often attain larger sizes than stream-reared fish. It has been shown in the Santa Cruz, California area that these larger fish survive much better in the ocean than the smaller fish. After their first year of life, steelhead may undergo physiological and morphological changes enabling the fish to survive in a marine environment. These smolts then migrate to the ocean, typically from March to May (Moyle 2002). The steelhead spend two to three years in the ocean and can grow to approximately 35 inches in length and weigh up to 22 pounds, although most fish are smaller (Moyle 2002). Studies of central California fish indicate that most fish return to their natal stream, but some fish do stray to other streams. This aspect of southern California populations is little studied and is an area of active current research.

In addition to impacts to individuals, the primary threats to steelhead include loss of important portions of habitat range and deterioration of habitats due to artificial barriers that limit upstream migration, diversion of water from natural channels, and introduction of non-native species. The following provides a brief summary of the threats to southern steelhead based on the five listing factors that are used to assess species for listing as threatened or endangered under the federal ESA: (1) alteration of flow regimes from construction of dams and diversions; (2) decreased water quality (particularly higher water temperatures); (3) recreational fishing; (4) predation from birds and other fishes; and (5) competition and introduction of disease from trout and exotic species such as channel catfish, black bullhead, green sunfish, and largemouth bass.

Critical Habitat

The southern steelhead was listed as endangered under the federal ESA in 1997 in the Southern California ESU that extends from the Santa Maria River in the north southward to Malibu Creek without critical habitat (62 FR 43937–43954). On May 1, 2002, the range of the Southern California ESU was extended south to the United States–Mexico Border (67 FR 21586–21598). In 2005, the final critical habitat designation for the Southern California ESU was determined (70 FR 37159–37204). On January 5, 2006, the federal endangered status of the southern steelhead was re-affirmed for 10 Distinct Population Segments (DPS) of West Coast Steelhead (71 FR 834) and, in September 2007, a Federal Recovery Outline for the DPS of southern steelhead was released (NMFS 2007).

In the Santa Clara River Watershed, designated critical habitat includes the Santa Clara River and its tributaries from Piru Creek (below Santa Felicia Dam) to the Santa Clara River confluence and downstream to the Pacific Ocean. The upstream extent of designated critical habitat is approximately five miles downstream of the Project area in Ventura County, California. In 2000, the National Marine Fisheries Service (NMFS) issued a letter to the Corps clarifying their designation of critical habitat in the Santa Clara River Watershed as follows (Lecky 2000):

> *Currently available information [also] indicates that the Santa Clara River basin upstream from its confluence with Piru Creek is unlikely to be occupied or accessible to steelhead and, therefore, is not currently considered by NMFS to be part of the critical habitat designation for this ESU.*

Recovery Plan

Presently, a Recovery Plan required by the federal ESA has not been published. However, a Southern California ESU recovery team has been formed and is currently working on a draft Recovery Plan for southern steelhead within the Santa Clara River and the Southern California ESU. In September 2007, a Federal Recovery Outline for the DPS of southern steelhead was released (NMFS 2007).

Survey Results

In 2004 and 2005, reconnaissance surveys were conducted along the Santa Clara River and tributary drainages within the Specific Plan area of the RMDP. The objectives of the survey were to characterize habitat and assess presence/absence of various fish species through visual observations and periodic dip net/seine sampling (ENTRIX 2009). The habitat assessment was conducted utilizing a modified level-two version of CDFG protocols presented in the California Salmonid Stream Habitat Restoration Manual (ENTRIX 2009). The protocol was modified to capture habitat attributes related to the target fish species rather than salmonids exclusively. The

fish sampling was conducted utilizing dip nets (four feet long overall, opening 16 by 12 inches with one-eighth-inch mesh) and/or a small seine (10 by four feet with one-eighth-inch mesh) and visual estimates. The surveys were conducted within the Newhall Ranch reach of the Santa Clara River from the confluence of Salt Canyon in the west to the confluence of Middle Canyon in the east. In addition, the surveys included the following tributary drainages: Salt Canyon, Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Castaic Creek, Humble Canyon, Lion Canyon, and Middle Canyon. Southern steelhead were not observed or collected in any of the surveyed areas. In the late spring of 2007, ENTRIX conducted an assessment of aquatic habitat conditions and identified potential physical migration barriers present in these tributary drainages (ENTRIX 2009). In the entire Project area, there is only one tributary reach (approximately 8,855 linear feet) of perennial habitat in Potrero Canyon that could possibly support any form of steelhead spawning or rearing activity. Aquatic habitat conditions within the reach where patchy small pools are very shallow are marginal for supporting any fish species, the deepest being approximately 30 centimeters deep. However, a culvert at the lowermost portion of the reach and a large bedrock headcut at the upstream end present significant barriers to upstream migration. Upstream of this reach in Potrero Canyon, conditions were classified as intermittent and do support any aquatic habitat suitable for fish.

In 2005, ENTRIX's quantitative habitat surveys of the Santa Clara River concluded that the Project reach channel has very low-gradient runs and riffles and is dominated by sandy substrate with little or no riparian canopy along the flowing stream (ENTRIX 2009). It is not expected that steelhead could successfully spawn in this reach due to inadequate substrate material (*e.g.*, lack of gravel for redd development) and sub-optimum water quality conditions related to wastewater outflows from upstream of the Project reach. The River habitat for steelhead also lacks requisite channel structure and pool habitat necessary to support rearing. If steelhead could migrate into the Project reach, this species would face significant challenges in successfully completing its life history cycle due to poor instream River habitat conditions and the absence of perennial tributary habitat for spawning and rearing. Therefore, this analysis has been conducted under the assumption that steelhead and their habitat are not present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, where no project will be constructed (No Project/No Action), southern steelhead and suitable habitat would not be impacted. The effects of continued operation of agricultural and oil and gas production activities within the Project area would not change any elements of southern steelhead life history or requisite habitat conditions downstream within the Santa Clara River. If Alternative 1 were selected, and none of the other build alternatives were implemented, there would not be any impacts to southern steelhead migration, spawning, or rearing activities downstream in the Santa Clara River.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

No historical records exist for southern steelhead in the Santa Clara River or tributaries upstream of the confluence of Piru Creek (Titus *et al.* n.d.), and the Project area is not included in the federal critical habitat designation for Southern California ESU steelhead, whereby NMFS considers natural barriers and specific dams within the historical range of each ESU to be the upstream limit of a critical habitat designation (65 FR 7764). Appropriate habitat to support southern steelhead life history, such as spawning and rearing, is not present with the RMDP and SCP project boundaries.

Implementation of the RMDP would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch Water Reclamation Plant (WRP) outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). The placement of bridge piers would be located within the Santa Clara River floodplain. This floodplain ranges in width from 980 to 1,550 feet at the bridge crossings, and bridge footings would have the potential to occur in flowing portions of the River, depending on stream hydrology. For example, the Potrero Canyon Bridge includes approximately 15 piers within the floodplain. During any given storm event, the number of piers subject to inundation may range from a single pier, to all of the piers. However, during summer low flows, the maximum number of piers to likely be in contact with the wetted channel would be two piers per bridge crossing. This would result in the direct loss of aquatic habitat in the Santa Clara River. While the placement of bridge footings would result in the loss of River channel, the large width and hydrology of the River would maintain the formation of natural channels suitable for this species.

ENTRIX (2009) evaluated the long-term effects of these facilities on fish habitat and concluded that no significant effects would occur because the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered. Parameters evaluated included potential changes in floodplain width, backwater refuge habitat (zero to two feet per second (fps) flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including 20- and 100-year occurrences (**Figures 4.5-61a** and **4.5-61b**). Since steelhead do not utilize or otherwise fulfill their life history requirements within the Project reach, RMDP direct permanent impacts to aquatic habitat would be less than significant.

Although no substantial permanent impacts to fish habitat would occur through implementation of the RMDP, the Project would temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Bridge construction, in particular, could directly affect aquatic habitat occupied by fish through disturbance within the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor. However, impacts to aquatic habitat in the Project reach of the Santa Clara River would be less than significant because steelhead is not expected to occur in the Project area and the aquatic habitat present does not support requisite habitat conditions for steelhead spawning and rearing.

Implementation of the RMDP would not result in the significant alteration of stream hydrology or limit access to refugia during storm events. Implementation of the RMDP would not substantially affect fish habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be less than significant.

Indirect Permanent Impacts

As described above, RMDP impacts would occur to aquatic habitat in the Project reach of the Santa Clara River. However, appropriate habitat to support southern steelhead life history, such as spawning and rearing, is not present. Therefore, build-out of the Specific Plan, VCC, and Entrada planning areas will not impact aquatic habitat, including that for southern steelhead, since steelhead utilization of the Project area is not expected to occur and requisite habitat conditions for steelhead spawning and rearing are not present.

Project build-out would not have a substantial adverse effect on the population or habitat; substantially interfere with the movement of southern steelhead; have the potential to substantially reduce the habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Impacts to aquatic habitat would not occur as a result of the build-out of the Specific Plan, VCC, or Entrada planning areas; therefore, no impacts to southern steelhead are expected to occur.

Combined Direct and Indirect Permanent Impacts

Aquatic habitat within the RMDP site does not support steelhead life history and no utilization has been documented within the Project reach of the Santa Clara River nor is any utilization expected to occur in the future. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in

permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, the impacts to aquatic habitat within the Project reach would be less than significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

No historical records exist for southern steelhead in the Santa Clara River or tributaries upstream of the confluence of Piru Creek (Titus *et al.* n.d.), and the Project area is not included in the federal critical habitat designation for Southern California ESU steelhead, whereby NMFS considers natural barriers and specific dams within the historical range of each ESU to be the upstream limit of a critical habitat designation (65 FR 7764). The Project reach of the Santa Clara River does not include requisite aquatic habitat to support steelhead life history and no utilization has been documented within the Project reach of the Santa Clara River nor is any utilization expected to occur in the future. A recognized, natural barrier to fish migration within the Santa Clara River exists downstream of the Project area and upstream of the Piru Creek confluence in the form of an ephemeral reach of the River that is referred to as the "Dry Gap." The Dry Gap consists of an area downstream of the Los Angeles County/Ventura County line where surface flows in the River are lost to the Piru groundwater basin. Additionally, NMFS has indicated that the Santa Clara River basin upstream of the Piru Creek confluence is unlikely to be occupied by or accessible to steelhead (Lecky 2000).

Implementation of the Project would require the construction of bridges and bank stabilization within the River corridor. Due to the absence of southern steelhead and their habitat, it is unlikely that implementation would result in physical impacts to steelhead in the Project area. However, it is possible that over the 20-year course of the Project a vagrant steelhead or rainbow trout could be found during surveys or fish exclusion activities prior to construction.

With implementation of the RMDP, direct permanent and temporary impacts will not substantially interfere with the movement of the species; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be less than significant.

Indirect Permanent Impacts

As described above, build-out of the Specific Plan, VCC, and Entrada planning areas does not have potential to impact southern steelhead individuals within the Project reach because no build-out-related impacts to aquatic habitat would occur in the Santa Clara River where fish species would be present. Impacts to southern steelhead individuals are not expected as a result of the build-out of the Specific Plan, VCC, or Entrada planning areas. Project build-out would not have a substantial adverse effect on the population or habitat; substantially interfere with the movement of southern steelhead; have the potential to substantially reduce the habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Accordingly, build-out of the Specific Plan, VCC, or Entrada planning areas would not result in indirect impacts to southern steelhead individuals because steelhead are not expected to occur on site.

Secondary Impacts

Although southern steelhead are not present in the Santa Clara River or tributaries within the Project area and the Project area is not included the federal critical habitat designation for Southern California ESU steelhead (65 FR 7764), the Project has the potential to affect fish species and habitat downstream of the Project through short-term or long-term hydrologic, geomorphic, or water quality alterations of the River.

Implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in both short-term secondary effects during construction and long-term effects due to use of RMDP facilities and build-out of the Project area. Because steelhead are not expected to be present within the Project reach of the Santa Clara River, it is unlikely that short- or long-term secondary impacts would occur. In addition, these impacts are unlikely to affect the downstream populations of steelhead within the Santa Clara River basin. Implementation of the SCP would not result in secondary impacts to this species.

Short-term construction-related effects include hydrologic and water quality effects, such as sedimentation, increased turbidity, temperature, or the introduction of other pollutants. It is unlikely that these short-term impacts could affect steelhead in the Santa Clara River in downstream populations.

Long-term effects associated with operation of RMDP facilities and build-out of the Project area due to potential physical changes in the River and increased discharges include alterations in base flows, timing and duration of flood flows, biochemical changes, condition and composition of the substrate, aquatic and riparian vegetation (including exotic species), and water temperatures as well as increased pollutants from irrigation runoff and increased runoff from

roadways. Additional secondary impacts associated with increased human presence include incidental litter and trash from recreation activity; impacts such as fecal material from pet, stray, and feral cats and dogs entering the aquatic system; and increased predation by exotic predators, such as bullfrogs and non-native fish. Steelhead are not known use the Project reach, nor are they expected to in the future; therefore, potential long-term secondary impacts would be less than significant.

Following build-out of the Specific Plan area, the physical changes to the River corridor and surrounding watershed could affect fish species and habitat downstream of the Project through long-term hydrologic, geomorphic, or water quality alterations of the River. The Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. Under Alternative 2, build-out will not appreciably alter the existing sediment transport regime (less than a 0.25% decrease in average annual sediment supply/delivery to the Santa Clara River). Therefore, channel morphology and substrate composition conditions downstream that support steelhead migration in Ventura County will not be affected. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The PACE (2009) study determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in downstream portions of the River that support various special-status fish species would be maintained and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected.

Additionally, although the Newhall Ranch WRP will be a near-zero discharge facility, limited discharge from the WRP to the Santa Clara River will occur during the winter months. Depending upon the nature and extent of these changes, it is possible that southern steelhead present downstream of the Project area and downstream of the Dry Gap (within federally designated critical habitat for the Southern California ESU steelhead) could be affected by alterations in the River's base flow, timing and duration of flood flows, condition and composition of the substrate, and presence of aquatic and riparian vegetation, on the occasions when connectivity through the Dry Gap occurs. If the discharge from the Newhall Ranch WRP substantially lengthens the duration of seasonal flow in the "Dry Gap" and cause steelhead to intermittently migrate further upstream into the Project reach, it would be considered a significant secondary impact of the Project because requisite spawning and rearing habitat is unavailable. Based on an analysis of post-development conditions within the Dry Gap (GSI Water Solutions 2008), it was determined that the future WRP discharge will not affect the seasonality (*i.e.*, ephemeral nature) of flows through the Dry Gap; therefore, the impact would be less than significant. In addition, these potential changes in hydrology are not substantial and steelhead migration downstream of the Dry Gap would not be affected.

These short-term and long-term secondary impacts would not have a substantial adverse effect on the southern steelhead; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species (significance criteria 1, 4, and 7). Secondary impacts would be less than significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Overall, implementation of the RMDP under Alternatives 3 through 7 would have similar types of impacts to aquatic habitat for fish in the Santa Clara River corridor to those described above for Alternative 2 (**Figures 4.5-34-A1** through **4.5-38-D2**). Although no substantial permanent impacts to fish habitat would occur through implementation of the RMDP under Alternatives 3 through 7, the Project has the potential to temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Buried bank stabilization would be installed at the riparian–upland interface under all the alternatives, although under Alternative 7 it would be outside the 100-year floodplain and thus would have a substantially reduced risk of temporary impacts to fish habitat. Bridge construction, in particular, would directly affect aquatic habitat through direct disturbance to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor as previously described for Alternative 2. Three bridges would be constructed under Alternative 2. Bridges would also be constructed under Alternatives 3 through 7: two under Alternatives 3, 4, and 6; three under Alternative 5; and one under Alternative 7 (see **Table 4.5-23**, Key Components of Alternatives, for details). Thus, Alternatives 3, 4, 6, and 7 would have relatively reduced temporary impacts from bridge construction compared to Alternatives 2 and 5.

As described previously for Alternative 2, aquatic habitat does not support steelhead life history and no utilization has been documented within the Project reach of the Santa Clara River nor is any utilization expected to occur in the future. In addition, numerous measures protective of fish habitat have already been incorporated, which would also be protective of steelhead. Therefore, the impacts to aquatic habitat within the Project reach would be less than significant.

ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on fish species for Alternatives 3, 4, 5, 6, and 7. Parameters evaluated included potential changes in floodplain width, floodplain refugia (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including five-, 10-, 20-, 50-, and 100-year occurrences. **Figures 4.5-62a** through **4.5-65b** show the range of floodplain

effects for the 20- and 100-year flood events. The following summarizes the results of this analysis.

Alternatives 3 and 4

Implementation of the RMDP within the Project reach of the Santa Clara River would include 31,857 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch; the construction of bridges at Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-62a** and **4.5-62b**). Alternatives 3 and 4 construct one less bridge (Potrero Canyon Road) than Alternative 2, but the direct impacts from construction would be similar to Alternative 2. Direct impacts from construction would be the same with regard to steelhead habitat and therefore, would be less than significant since steelhead have not and are not expected to use the Project reach of the Santa Clara River because requisite habitat to complete their life history is not present.

Alternative 5

Implementation of the RMDP between Salt Creek and Middle Canyon would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon, and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-63a** and **4.5-63b**). Alternative 5 bridge construction (three bridges) would be similar to Alternative 2, and the direct impacts from construction would be the same with regard to steelhead habitat. Therefore, these impacts would be less than significant since steelhead have not and are not expected to use the Project reach of the Santa Clara River because requisite habitat to complete their life history is not present.

Alternative 6

Implementation of the RMDP between Salt Creek and Middle Canyon would include 29,293 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon and Long Canyon; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-64a** and **4.5-64b**). Alternative 6 constructs one less bridge (Commerce Center Drive) than Alternative 2. However, the direct impacts from construction would be similar to Alternative 2 and the direct impacts from construction would be the same with regard to steelhead habitat. Therefore, these impacts would be

less than significant since steelhead have not and are not expected to use the Project reach of the Santa Clara River because requisite habitat to complete their life history is not present.

Alternative 7

Implementation of the RMDP between Salt Creek and Middle Canyon would include the construction of one bridge at Long Canyon (with spans removed from the 100-year floodplain); the grading and conversion of 13,956 linear feet of ephemeral drainages to buried storm drains; and construction of a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-65a and 4.5-65b**). Bank protection would be removed from the 100-year floodplain and built in upland areas. All jurisdictional streams and wetlands in the Santa Clara River, Potrero Canyon, Chiquito Canyon, and San Martinez Grande Canyon drainages would be preserved or avoided except where bridges are built to facilitate road crossings.

Alternative 7 constructs two less bridges (Potrero Canyon Road and Commerce Center Drive) than Alternative 2. However, the direct impacts from construction would be similar to Alternative 2, and the direct impacts from construction would be the same with regard to steelhead habitat. Therefore, these impacts would be less than significant since steelhead have not and are not expected to use the Project reach of the Santa Clara River because requisite habitat to complete their life history is not present.

Indirect Permanent Impacts

As described above, RMDP impacts would occur to aquatic habitat in the Project reach of the Santa Clara River. However, appropriate habitat to support southern steelhead life history, such as spawning and rearing, is not present. Therefore, Alternative 3, 4, 5, 6, and 7 build-out scenarios for the Specific Plan, VCC, and Entrada planning areas will not impact southern steelhead habitat since steelhead utilization of the Project area is not expected to occur. Therefore, indirect impacts to aquatic habitat would not occur.

Impacts to habitat for southern steelhead are not expected to occur as a result of the build-out of the Specific Plan, VCC, or Entrada planning areas. Project build-out would not have a substantial adverse effect on the population or habitat; substantially interfere with the movement of southern steelhead; have the potential to substantially reduce the habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7).

Combined Direct and Indirect Permanent Impacts

Aquatic habitat does not support steelhead life history and no utilization has been documented within the Project reach of the Santa Clara River nor is any utilization expected to occur in the future. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Therefore, the impacts of Alternatives 3, 4, 5, 6, and 7 to aquatic habitat within the Project reach would be less than significant.

Impacts to Individuals

Due to the absence of southern steelhead and their habitat, it is unlikely that implementation of the RMDP or build-out of the Specific Plan, VCC, and Entrada planning areas would result in physical impacts to steelhead in the Project area. Implementation of the Project would require the construction of bridges and bank stabilization within the River corridor. Due to the absence of southern steelhead and their habitat, it is unlikely that implementation would result in physical impacts to steelhead in the Project area. However, it is possible that over the 20 year course of the Project, a vagrant steelhead or rainbow trout could be found during surveys or fish exclusion activities prior to construction.

With implementation of the RMDP under Alternatives 3 through 7, direct permanent and temporary impacts would not substantially interfere with the movement of the species; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be less than significant.

Secondary Impacts

Because potential secondary impacts under Alternatives 3 through 7 would be similar or less than Alternative 2, short-term and long-term secondary impacts that could occur under Alternatives 3 through 7 will not have a substantial adverse effect on the southern steelhead; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species (significance criteria 1, 4, and 7). Secondary impacts would be less than significant.

Mitigation Strategy and Summary

Southern steelhead would not be subject to significant direct, indirect, or secondary impacts by the proposed Project because this species is not expected to occur in the Project area and the requisite habitat features to support spawning and rearing are not present on site; therefore, no mitigation is required for this species. Although no mitigation is required, in the unlikely event that a vagrant southern steelhead occurred in the Project area, potential impacts would be reduced by previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that, at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

As this fish is associated with riparian areas, southern steelhead could also benefit from previously incorporated measures SP-4.6-1 through SP-4.6-16 and SP-4.6-18 through SP-4.6-26, which dedicate the River Corridor SMA and set requirements for restoration and enhancement of riparian vegetation, removal of grazing, and establishment of a transition area between developed areas and the River Corridor SMA, which will avoid and minimize downstream impacts to water quality.

Any potential impacts to vagrant southern steelhead would also be reduced by implementation of previously incorporated Mitigation Measures SP-4.6-44, SP-4.6-57, and SP-4.6-58. SP-4.6-44 requires that drainages with flows greater than 2,000 cubic feet per second have soft bottoms. Bank protection will be of ungrouted rock or buried bank stabilization, as described in **Subsection 2.5.2.a**, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization. SP-4.6-57 requires that, where bridge construction is proposed and water flow would be temporarily diverted, blocking nets and seines be used to control and remove fish from the area of activity. All fish captured during this operation would be stored in tubs and returned unharmed back to the River after construction activities were complete. SP-4.6-58 requires that in order to limit impacts to water quality, the Specific Plan shall conform to all provisions of required National Pollutant Discharge Elimination System (NPDES) permits and water quality permits that would be required by the State of California Regional Water Quality Control Board.

This EIS/EIR recommends several mitigation measures that would reduce impacts to vagrant southern steelhead. These mitigation measures include coordination with the USFWS and CDFG, channel diversion requirements, biological monitoring, avoidance of flowing water, design guidelines for bridges and culverts, and other BMPs. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour,

and sedimentation. Specifically, Mitigation Measure WQ-1 in **Section 4.4,** Water Quality, and Mitigation Measures GRR-1 through GRR-7 in **Section 4.2**, Geomorphology and Riparian Resources, provide additional measures to reduce the impacts to southern steelhead individuals. These mitigation measures include implementation of Project BMPs (including runoff control, conservation of natural areas, minimization of stormwater runoff pollutants of concern, prevention of slope and channel erosion, and education and signage to discourage illegal dumping to the storm drains), and other measures to minimize impacts to riparian resources and geomorphology (peak storm flow control, bridge span and clearance guidelines, maintenance minimization, channel design to minimize erosion potential, sediment and debris control, reintroduction of sediments for beach replenishment, and a Geomorphology Monitoring and Management Plan).

Potential impacts to vagrant southern steelhead could be reduced by mitigation measures that protect and exclude fish from construction areas. BIO-43 provides for the biological surveys of aquatic habitats within 300 feet of construction sites and access roads for the presence of special-status fishes at least 10 days prior to commencing construction, unless fish spawn has occurred or juvenile fishes are present; then construction activities would be suspended. BIO-44 requires that temporary crossings or access across the River be constructed outside of the winter season and not during spring periods when fish spawning is occurring, and be consistent with a Stream Crossing and Diversion Plan that outlines the following: the timing and methods for pre-construction fish surveys; a detailed description of the diversion methods; fish exclusion techniques; methods to maintain fish passage; channel habitat enhancement design; fish stranding surveys; and the techniques for the removal of temporary crossings prior to winter storm flows. BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure proper construction, operation, and abandonment diversion or dewatering will occur. BIO-46 requires that a qualified biologist inspect diversion or dewatering activities for stranded fish or other aquatic organisms. BIO-47 provides for the construction of additional slow moving water habitats upstream and downstream of any river crossing or bridge construction area to provide refuge for special status fishes during construction. BIO-48 requires the design and installation of bridges, culverts, or other structures to not impair the movement of fish and aquatic life and provisions for a low flow channel where velocities are less than two fps to allow fish passage.

Potential impacts to vagrant southern steelhead could also be reduced by mitigation measures that minimize impacts related to water quality and dust. BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows. BIO-63 will be implemented to mitigate impacts by pet, stray, and feral cats and dogs, such as fecal material entering the aquatic system. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed

control of stray and feral cats and dogs in open space areas. BIO-70 provides for construction plans that will include erosion control plans and dust control plans, specifications, and details, along with an overall Project SWPPP. Together, these documents shall include measures to ensure that impacts (*e.g.*, the introduction of chemical pollutants, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology) to vegetation communities and special-status plant species are avoided or minimized during construction. BIO-71 requires that development areas have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and aquatic wildlife species. Dust control plans shall be prepared prior to initiation of construction activities and shall comply with SCAQMD Rule 403 (SCAQMD 2005).

Finally, potential impacts to vagrant southern steelhead by non-native predators could be reduced by BIO-80, which states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

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UNARMORED THREESPINE STICKLEBACK (FE, CE, CFP)

Life History

The unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) is listed as both state- and federally endangered and is a California Fully Protected species. Although originally widespread throughout the Los Angeles Basin, the unarmored threespine stickleback is currently found in few locations which are all situated outside of the Los Angeles River basin (Swift *et al.* 1993). The unarmored threespine stickleback is a known resident species in the Santa Clara River throughout the Project reach, and the RMDP site is within the Del Valle zone of the designated essential habitat for this species (**Figure 4.5-60**, Habitat in RMDP/SCP for Unarmored Threespine Stickleback).

The unarmored threespine stickleback is a small territorial fish that can grow up to a maximum of approximately four inches in length (CDFG 2000). There are numerous subspecies and morphs of threespine stickleback (*G. aculeatus*) found throughout the Northern Hemisphere, and these are thought to represent a superspecies[1] whose ancestral form is the completely plated morph inhabiting marine waters and some freshwaters (Moyle 2002; McPhail 2007; Östlund-Nilsson *et al.* 2007). Threespine sticklebacks lack scales that are common to other fish, and they are related to pipefish and seahorses (ITIS 2007). Their spines and plating are thought to provide protection against piscivorous fish, such as salmonids, by disrupting the capture biomechanics of the predator's jaws, inhibiting capture, and providing increased opportunities for escape (Reimchen 1992, 2000). Studies of threespine stickleback systematics suggest that reduction of plating is a common convergent morphological change in freshwater populations; many such populations colonized inland streams and lakes after the Pleistocene (ice-age) glacial retreat (O'Reilly *et al.* 1993; Orti *et al.* 1994). The USFWS (1985) notes that the unarmored threespine stickleback can be found in all areas of streams, but they prefer slow-moving and standing water or locations behind obstructions, at the edge of streams, or in vegetation in faster moving water. Similar to other threespine stickleback species, male unarmored threespine sticklebacks create a nest in slow-moving water, by gluing together bits of vegetation, such as grass and sticks, using a kidney-secreted protein, and will vigorously defend the established nest territory. After egg fertilization, the male will care for and protect the eggs until the young leave. The male unarmored threespine stickleback will fan the eggs with his pectoral fins, helping to ensure proper development of the embryos. The amount of suitable breeding habitat may be a limiting factor in the population of the unarmored threespine stickleback (CDFG 2000). The unarmored threespine stickleback lives for about one year, and few if any survive to breed again (USFWS 1985; ESIS 1998).

[1] A superspecies is a set of closely related species.

Critical Habitat

On November 17, 1980, the USFWS proposed designating approximately 51 kilometers (31.7 miles) of streams in Los Angeles and Santa Barbara counties as critical habitat for the unarmored threespine stickleback (45 FR 76012). The proposed critical habitat included three stream zones of the upper Santa Clara River, including the Del Valle zone, the San Francisquito zone, and the Soledad Canyon zone. The Del Valle zone includes the Project area and runs from the confluence with San Martinez Grande Canyon upstream to the I-5 Bridge. On September 17, 2002, the USFWS determined that a designation of critical habitat for unarmored threespine stickleback should not be made because the initial federal listing was in 1970 under the Endangered Species Conservation Act of 1969, the predecessor of the Endangered Species Act of 1973 (67 FR 58850–58582). The Endangered Species Conservation Act did not have a critical habitat designation requirement. A lawsuit brought by the Center for Biological Diversity (CBD) resulted in a decision by the Ninth Circuit Court of Appeals in 2006 upholding the USFWS decision to not designate critical habitat for unarmored threespine stickleback.

Because there is no critical habitat designation in the Project area, critical habitat is not further addressed in the unarmored threespine stickleback analysis in this EIS/EIR.

Recovery Plan

The Unarmored Threespine Stickleback Recovery Plan (Revised) was published by the USFWS on December 26, 1985 (USFWS 1985). The recovery strategy for the unarmored threespine stickleback consists of five parts: (1) restore and maintain essential habitat at optimum conditions; (2) restore and maintain populations at optimum conditions; (3) determine life history and obtain needed ecological and genetic information; (4) inform the public of the species' status and recovery effort; and (5) utilize laws and regulations to protect fish and habitat. The Recovery Plan designated three areas as very important for the survival and recovery of the species: (1) two disjunct reaches of the Santa Clara River in Los Angeles County; (2) a short reach of San Francisquito Canyon; and (3) and the lowermost 8.4 miles in San Antonio Creek in Santa Barbara County. One of the reaches in the Santa Clara River is the area from San Martinez Grande Canyon upstream to the I-5 Bridge, which runs through the Project area and is the same area proposed as critical habitat (45 FR 76012).

Survey Results

ENTRIX (2009) conducted surveys for the unarmored threespine stickleback in 2004 and 2005 within the Newhall Ranch reach. ENTRIX (2009) surveyed for unarmored threespine stickleback habitat by targeting habitat attributes between Salt Creek Canyon and The Old Road Bridge. The survey recorded habitat type, length and mean width, mean and maximum depth, substrate composition, water and air temperature, and percent edgewater vegetation.

The unarmored threespine stickleback was observed during surveys within the Santa Clara River portion of the Specific Plan area in 1988, 1995, 2000, 2002–2005, and 2007 (Aquatic Consulting Services 2002A, 2002B, 2002C, 2002D; ENTRIX 2009; Haglund 1989; SMEA 1995, 2000; Impact Sciences 2003A, 2003B, 2003C).

Because the unarmored threespine stickleback is confined to perennial aquatic habitat in the Santa Clara River, which comprises a small portion of the wetland/riparian habitat in the River and has high temporal variability, suitable aquatic habitat was not quantified for the purpose of the impact analysis in this EIS/EIR. The presence of unarmored threespine stickleback is quite variable (ranging from rare or absent in certain reaches of the River, to locally abundant in any given year) in the Project reach in sections of the Santa Clara River, but the species is assumed to be present for this analysis.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP could result in permanent physical changes to the Santa Clara River corridor and surrounding watershed that could affect suitable unarmored threespine stickleback habitat, including hydrology and fluvial processes. Implementation of the SCP would not directly affect this species.

Habitat variables evaluated by ENTRIX (2009) included potential changes in floodplain width, backwater refuge habitat area (flood condition aquatic refugia), and water velocity during various theoretical flood frequency events. ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on the unarmored threespine stickleback. Parameters evaluated included potential changes in floodplain width, backwater refuge habitat (zero to two feet per second (fps) flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including 20- and 100-year occurrences (**Figures 4.5-61a** and **4.5-61b**). The following summarizes the results of this analysis.

Implementation of the RMDP between Salt Creek and Middle Canyon would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon, and Commerce Center Drive; and a Newhall Ranch Water Reclamation Plant (WRP) outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). The placement of bridge piers would be located within the Santa Clara River floodplain. This floodplain ranges in width from 980 to 1,550 feet at the bridge crossings, and bridge footings would have the potential to occur in flowing portions of the River depending on stream hydrology. For example, the Potrero Canyon Bridge includes approximately 15 piers within the floodplain. During any given storm event, the number of piers subject to inundation may range from a single pier to all of the piers. However, during summer low flows, the maximum number of piers to likely be in contact with the wetted channel would be two piers per bridge crossing. This would result in the direct loss of habitat occupied by stickleback. While the placement of bridge footings would result in the loss of River channel, the large width and hydrology of the River would maintain the formation of natural channels to support this species. Therefore, this permanent loss of habitat due to bridge footings would be adverse but not significant.

The primary effect of construction within the River channel is the alteration of natural stream hydrology and the quantity of stickleback habitat available. The ENTRIX report (2009) analyzed the hydrologic effects of the Project on the Santa Clara River for impacts to potential unarmored threespine stickleback habitat. Based on an evaluation of velocity tolerance studies of stickleback fishes, ENTRIX inferred that unarmored threespine stickleback in the Santa Clara River require flood refugia velocities of two fps or less in natural river floodplain in order to avoid being washed downstream during flood events (ENTRIX 2009). Areas maintaining velocities less than or equal to two fps would provide refuge during storm events. Under existing conditions (dry and wet season conditions), most of the wetted channel of the Santa Clara River supports flows greater than two fps. In the Project area, stickleback tend to be associated with flow velocities less than two fps in areas along the margin of the river and backwater areas outside of the higher velocity portions of the wetted channel.

At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available area with less than two fps velocity of 1.3 acres and 5.5 acres, respectively, for the unarmored threespine stickleback. During the 20-, 50-, and 100-year events, there is a decrease in habitat with less than two fps velocity at 12.5 acres, 11.1 acres, and 8.9 acres, respectively. The decrease is not expected to be significant, as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia habitat for the unarmored threespine stickleback. Suitable

floodplain refugia requires microhabitat elements, such as vegetative cover, substrate, and stream topography (ENTRIX 2009). Agricultural land is not considered as refuge, as it presents a greater threat to fish stranding during high flood events. The ENTRIX report further indicates that the alteration of the stream hydrology would not result in significant impacts related to stickleback access to floodplain refugia during flood events, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow floodplain refugia would not be substantially altered. This is illustrated on **Figures 4.5-61a** and **4.5-61b,** which indicate stream flow areas with less than two fps during the 20- and 100-year flood events, respectively (see entire set of graphics in ENTRIX 2009 report, Appendix 4.5).

Implementation of the RMDP between Salt Creek and Middle Canyon would include buried bank stabilization along the upland–riparian interface along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch), the construction of bridges at Potrero Canyon, Long Canyon, and Commerce Center Drive, and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). ENTRIX (2009) evaluated the long-term effects of these facilities on unarmored threespine stickleback habitat and concluded that no significant effects to unarmored threespine stickleback habitat would occur because the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

There also would be no impacts to unarmored threespine stickleback habitat resulting from modifications to tributaries to the Santa Clara River due to the absence of unarmored threespine stickleback. Most of the tributaries do not support perennial flows, and none of the tributaries have surface water connectivity with the Santa Clara River, except for Middle and Potrero canyons, which although they contain perennial flow, they have substantial blockages (bedrock headcuts or cascades) that are impassable to fish (ENTRIX 2009).

Although no substantial permanent impacts to unarmored threespine stickleback habitat would occur through implementation of the RMDP, the Project would temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Bridge construction, in particular, could directly affect aquatic habitat occupied by unarmored threespine stickleback through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor. Direct impacts from temporary construction would be significant absent mitigation primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

With implementation of the RMDP direct temporary impacts would substantially affect unarmored threespine stickleback habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct temporary impacts (Loss of Habitat) would be significant, absent mitigation. Implementation of the RMDP would not result in the significant alteration to stream hydrology or limit access to refugia during storm events and, therefore, direct permanent impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River, construction activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas do not have potential to harm or eliminate occupied unarmored threespine stickleback habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on the unarmored threespine stickleback habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would not be significant because no impacts are expected to occur as a result of Specific Plan build out and development outside of the River and aquatic habitat.

Combined Direct and Indirect Permanent Impacts

Only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts would be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The presence of unarmored threespine stickleback is quite variable (ranging from rare or absent in certain reaches of the River, to locally abundant in any given year) in the Project reach, and the species is generally assumed to be present for this analysis. Implementation of the RMDP, including construction of buried bank structures and bridges, could adversely affect individual unarmored threespine sticklebacks during construction work within the River. The potential for impacts from installation of these structures is increased as the construction is planned for marginal areas of the riparian zone and because this species is known to use lateral backwater refuge habitat and aquatic environments of emergent, fringe vegetation. Direct impacts to the species may occur during construction of RMDP components during the following anticipated activities:

- Stream diversion and/or species exclusion;
- unauthorized entry of construction equipment into ponded or flowing water;
- placement of fill in occupied waters;
- construction dewatering activities;
- discharge of pollutants, including silt, sediment, fresh concrete, trash/debris, and petroleum or other deleterious materials or pollutants, and/or;
- unauthorized personnel entry into occupied waters.

These activities could result in the following impacts:

- inadvertently directing fish to unsuitable habitats, blocking fish passage, stranding of fish in unsuitable habitat, or directing fish into unsuitable flow regimes;
- causing water quality conditions unsuitable for the fish survival;
- direct mechanical crushing or entombment of fish;
- unauthorized collection of individuals and/or physical disturbance of river edge habitats

Implementation of the SCP would not directly impact this species within the Project reach or downstream. Implementation of the RMDP could have direct substantial adverse effects on the unarmored threespine stickleback, interfere with the movement of the species, and substantially reduce the number of the species (significance criteria 1, 4,

and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River corridor, build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the impacts to unarmored threespine stickleback individuals. Project build-out would not have a substantial adverse effect on the unarmored threespine stickleback; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because physical on-site impacts are not expected to occur due to Specific Plan build-out.

Secondary Impacts

Implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in both short-term secondary effects during construction and long-term effects due to use of RMDP facilities and build-out of the Project area. These impacts could affect the unarmored threespine stickleback along the Santa Clara River corridor within the Project area and in downstream populations. Implementation of the SCP would not result in secondary impacts to this species.

Short-term construction-related effects include hydrologic and water quality effects. These short-term impacts could affect unarmored threespine stickleback in the Santa Clara River within the Project area and in downstream populations.

Long-term effects associated with operation of RMDP facilities and build-out of the Project area due to potential physical changes in the River and increased discharges include alterations in base flows; timing and duration of flood flows; biochemical changes; condition and composition of the substrate; aquatic and riparian vegetation (including exotic species); water temperatures; increased pollutants from irrigation runoff; and increased runoff from roadways. Additional secondary impacts associated with increased human presence include incidental litter and trash from recreation activity; impacts such as fecal material from pet, stray, and feral cats and dogs entering the aquatic system; and increased predation by exotic predators, such as bullfrogs and non-native fish.

These short-term and long-term secondary impacts could have a substantial adverse effect on the unarmored threespine stickleback; substantially interfere with the movement of the species;

reduce the species' habitat; or restrict the range of the species (significance criteria 1, 4, and 7). Secondary impacts would be significant, absent mitigation.

Following build-out of the Specific Plan areas, the physical changes to the River corridor and surrounding watershed could affect fish species and habitat downstream of the Project through short- or long-term hydrologic, geomorphic, or water quality alterations of the River. Newhall Ranch WRP will be a near-zero discharge facility. Limited discharge from the WRP to the Santa Clara River is only to occur during the winter months. Of primary concern is the potential that the partially armored subspecies of threespine stickleback present downstream of the Project area and downstream of the Dry Gap could have access to the Project area and could hybridize with unarmored threespine stickleback by alterations in the river's base flow or changes to the seasonality or connectivity through the Dry Gap. During periods when connectivity between these two populations occurs, flows are of a sufficient velocity to prevent upstream passage and migration of partially-armored threespine stickleback. If the discharge from the Newhall Ranch WRP creates conditions that allow partially-armored threespine stickleback to migrate further upstream into the Project reach, it would be considered a significant secondary impact of the Project due to the potential for genetic introgression into the unarmored threespine stickleback population in the Project reach. Based on an analysis of post-development conditions within the Dry Gap (GSI Water Solutions, 2008), it was determined that the future WRP discharge will not affect the seasonality (*i.e.*, ephemeral nature) or duration of flows through the Dry Gap. Therefore, secondary impacts to unarmored threespine stickleback from genetic introgression are not expected to occur and are considered less than significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Overall, implementation of the RMDP under Alternatives 3 through 7 would have similar types of impacts to unarmored threespine stickleback habitat in the Santa Clara River corridor to those described above for Alternative 2 (**Figures 4.5-34-A1** through **4.5-38-D2**). Although no substantial permanent impacts to unarmored threespine stickleback habitat would occur through implementation of the RMDP under Alternatives 3 through 7, the Project has the potential to temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Buried bank stabilization would be installed at the riparian–upland interface under all the alternatives, although under Alternative 7 it would be outside the 100-year floodplain and thus would have a substantially reduced risk of temporary impacts to unarmored threespine stickleback habitat. Bridge construction, in particular, would directly affect aquatic habitat occupied by unarmored threespine stickleback through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor as

previously described for Alternative 2. Three bridges would be constructed under Alternative 2. Bridges would also be constructed under Alternatives 3 through 7: two under Alternatives 3, 4, and 6; three under Alternative 5; and one under Alternative 7 (see **Table 4.5-23**, Key Components of Alternatives, for details). Thus, Alternatives 3, 4, 6, and 7 would have relatively reduced temporary impacts from bridge construction compared to Alternatives 2 and 5.

As described previously for Alternative 2, direct impacts from construction would be significant absent mitigation primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on the unarmored threespine stickleback for Alternatives 3, 4, 5, 6, and 7. Parameters evaluated included potential changes in floodplain width, floodplain refugia (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including five-, 10-, 20-, 50-, and 100-year occurrences. **Figures 4.5-62a** through **4.5-65b** show the range of floodplain effects for the 20- and 100-year flood events. The following summarizes the results of this analysis.

Alternatives 3 and 4

Implementation of the RMDP within the Project reach of the Santa Clara River would include 31,857 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch; the construction of bridges at Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-62a** and **4.5-62b**). The ENTRIX report (2009) indicates that there would be the following impacts to potential unarmored threespine stickleback floodplain refugia. At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available refugia of 2.1 acres and 8.9 acres, respectively, for the unarmored threespine stickleback with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in refugia with less than two fps flow at 7.3 acres, 5.3 acres, and 5.7 acres, respectively. The decrease in refugia is not expected to be significant as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia for the unarmored threespine stickleback (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 3 and 4 construct one less bridge (Potrero Canyon Road) than Alternative 2; however, the direct temporary impacts to habitat from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 5

Implementation of the RMDP between Salt Creek and Middle Canyon would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-63a** and **4.5-63b**). The ENTRIX report (2009) indicates that there would be the following impacts to potential unarmored threespine stickleback habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 acres and 5.5 acres, respectively, for the unarmored threespine stickleback with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in habitat with less than two fps flow at 12.5 acres, 11.1 acres, and 8.9 acres, respectively. The decrease in habitat is not expected to be significant as the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for the unarmored threespine stickleback (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia would not be substantially altered, and therefore, any impact would be less than significant.

Three bridges would be constructed under Alternative 5. The direct temporary impacts to habitat from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 6

Implementation of the RMDP between Salt Creek and Middle Canyon would include 29,293 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon and Long Canyon; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-64a** and **4.5-64b**). The ENTRIX report (2009) indicates that there would be the following impacts to potential unarmored threespine stickleback habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 acres and 10.7 acres, respectively, for the unarmored threespine stickleback with less than two fps flow. During the 20-, 50-, and 100-year events there is a decrease in habitat with less than two fps flow at 7.0 acres, 4.6 acres, and 2.6 acres, respectively. The decrease in

habitat is not expected to be significant as the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for the unarmored threespine stickleback (ENTRIX 2009). The ENTRIX report (2009) further indicates that there would be no impacts from the installation of these Project components, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered. The ENTRIX report (2009) further indicates that accessible floodplain refugia would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 6 constructs one less bridge (Commerce Center Drive) than Alternative 2; however, the direct temporary impacts to habitat from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 7

Implementation of the RMDP between Salt Creek and Middle Canyon would include the construction of one bridge at Long Canyon (with spans removed from the 100-year floodplain); the grading and conversion of 13,956 linear feet of ephemeral drainages to buried storm drains; and construction of a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-65a and 4.5-65b**). Bank protection would be removed from the 100-year floodplain and built in upland areas. All jurisdictional streams and wetlands in the Santa Clara River, Potrero Canyon, Chiquito Canyon, and San Martinez Grande Canyon drainages would be preserved or avoided except where bridges are built to facilitate road crossings. The ENTRIX report (2009) indicates that there would be the following impacts to potential unarmored threespine stickleback habitat. The model predicts a projected increase of available refuge habitat (less flow during the five-, 10-, 20-, 50-, and 100-year flood events. The amount of available habitat would be 2.0, 13.3, 22.5, 41.7, and 25.2 acres, respectively. The ENTRIX report (2009) further indicates that there would be no impacts from the installation of these Project components, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

Alternatives 7 constructs two less bridges (Potrero Canyon Road and Commerce Center Drive) than Alternative 2; however, the direct temporary impacts to habitat from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

While implementation of the RMDP under Alternatives 3 through 7 would not have a substantial permanent adverse effect, temporary impacts could substantially affect unarmored threespine stickleback; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species; or

substantially reduce the number or restrict the range of the species. Direct permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts would occur but direct temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

The unarmored threespine stickleback within the Project area is limited to aquatic habitats within the Santa Clara River. As with Alternative 2, construction activities associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas do not have the potential to harm or eliminate occupied unarmored threespine stickleback habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on the unarmored threespine stickleback; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts are expected to occur.

Combined Direct and Indirect Permanent Impacts

For Alternatives 3 through 7, only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts are considered to be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Similar to Alternative 2, implementation of the RMDP would require the construction of bridges and bank stabilization within the River corridor, although the number of bridges varies among the alternatives and bank stabilization under Alternative 7 would be constructed outside the 100-year floodplain, resulting in reduced risk of temporary impacts to unarmored threespine stickleback habitat under this alternative. Implementation of the RMDP under Alternatives 3 through 7 may result in impacts to unarmored threespine stickleback individuals if construction

occurs during River flows adequate to support this species in work zones in occupied habitat or if construction causes interruptions in water flows. Implementation of the SCP would not directly impact this species.

Implementation of the RMDP under Alternatives 3 through 7 could have a direct substantial adverse effect on the unarmored threespine stickleback; interfere with the movement of the species; or substantially reduce the number of the species. Direct impacts to individuals under Alternatives 3 through 7 would be significant, absent mitigation.

Implementation of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7, would not result in indirect impacts to individuals.

Secondary Impacts

The potential short-term and long-term secondary impacts to the unarmored threespine stickleback and its habitat under Alternatives 3 through 7 would be similar to those described above for Alternative 2.

Short-term construction-related effects include hydrologic and water quality effects, as described above, that could affect unarmored threespine stickleback in the Santa Clara River within the Project area and in downstream populations.

Long-term effects associated with operation of RMDP facilities and build-out of the Project area could occur due to potential physical changes in the River and increased discharges and could affect base flows and flood flows and induce biochemical, substrate, temperature, and vegetative changes. Increased human activity could increase litter and trash, and fecal material from pet, stray, and feral cats and dogs may enter the aquatic system. In addition, increased predation by exotic predators, such as bullfrogs and non-native fish, may occur.

These short-term and long-term secondary impacts could have a substantial adverse effect on the unarmored threespine stickleback; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species. Secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Following build-out of the Specific Plan areas, the physical changes to the River Corridor and surrounding watershed could affect fish species and habitat downstream of the Project through short- or long-term hydrologic, geomorphic, or water quality alterations of the River. Newhall Ranch WRP will be a near-zero discharge facility. Limited discharge from the WRP to the Santa Clara River is only to occur during the winter months. Of primary concern is the potential that the partially armored species of threespine stickleback present downstream of the Project area and downstream of the Dry Gap could have access to the Project area and could hybridize with unarmored threespine stickleback by alterations in the river's base flow or changes to the

seasonality or connectivity through the Dry Gap. During periods when connectivity between these two populations occurs, flows are of a sufficient velocity to prevent upstream passage and migration of partially armored threespine stickleback. If the discharge from the Newhall Ranch WRP creates conditions that allow partially armored threespine stickleback to migrate further upstream into the Project reach, it would be considered a significant secondary impact of the Project due to the potential for genetic introgression into the unarmored threespine stickleback population in the Project reach. Based on an analysis of post-development conditions within the Dry Gap (GSI Water Solutions 2008), it was determined that the future WRP discharge will not affect the seasonality (*i.e.* ephemeral nature) or duration of flows through the Dry Gap. Therefore, secondary impacts to unarmored threespine stickleback from genetic introgression are not expected to occur and would be less than significant.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to unarmored threespine stickleback: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will avoid or substantially lessen impacts to unarmored threespine stickleback individuals. To avoid or substantially lessen impacts to unarmored threespine stickleback, protective measures will be implemented, such as pre-construction surveys, biological monitoring, exclusion of the species from construction areas using temporary diversion channels, and protection of habitat through facilities design guidelines and BMPs, which will avoid or substantially lessen impacts to unarmored threespine stickleback individuals.

Impacts to individuals, including adults and fry (juvenile fish), could occur during construction as a result of heavy equipment operation for access and grading, or during diversion of Santa Clara River flows. The Project incorporates numerous elements to avoid or substantially lessen potential impacts to individuals, such as injury or mortality, which would come as a result of direct contact with construction equipment or as an outcome of modification of River habitat, such as flow diversion activities. These measures include pre-construction surveys for any construction activity within 300 feet of River habitat to assure that stickleback are avoided or excluded, particularly during the sensitive periods such as spawning or when fry are present. These measures also specify the methods to be used for excluded stickleback, as well as how temporary diversion channels will be constructed to assure that adequate rearing habitat is present for stickleback during construction. These measures also employ provisions for constructing permanent and temporary stream crossings in the Santa Clara River in a manner that will allow for unimpeded movement upstream and downstream. Numerous water quality measures, such as construction stormwater BMPs (*e.g.*, silt fencing, erosion control materials,

sediment basins) and the installation of water quality treatment facilities are also included to minimize impacts from pollutants related to storm runoff during storm events.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR will reduce temporary impacts to unarmored threespine stickleback habitat through facilities design requirements, which will avoid and minimize impacts to habitat, and conformance with state and federal permits to protect water quality.

The vast majority of stickleback habitat in Project reach of the Santa Clara River will be preserved under all of the alternatives. Stickleback habitat will be impacted through the construction of RMDP facilities, by bridge pier or column footings in particular. It is estimated that one to two pier or column footings would affect stickleback habitat at each of the three Santa Clara River bridge crossings (Commerce Center Drive, Long Canyon Road, Potrero Canyon Road) depending on the location of the active channel. The wetted channel of the River is typically between 30 and 50 feet wide, while the river floodplain ranges between 1,000 and 2,000 feet wide. The spacing between piers and columns will be 100 feet, thus approximately one to two pier or column footings per bridge could be placed in the flow of the River and affect stickleback habitat. Because River flow will deflect off of these structures and will become realigned, stickleback habitat will become re-established after bridge construction is completed. Temporary diversion for the construction of piers and columns will include the establishment of additional habitat downstream to allow for necessary stickleback spawning, rearing, and/or oversummering. Bank stabilization features (buried soil cement, rock riprap, or gunite lining) will impact stickleback habitat through floodplain alterations caused by changes to flood flows through the Project area. Under severe flood conditions, stickleback will seek slow-moving floodplain areas as refugia from high velocity conditions. Although bank stabilization features will sometimes constrict flows through the Project reach, the amount of available flood refugia present during these events is adequate to protect stickleback from being flushed out of the Project area.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will avoid or substantially lessen secondary impacts on the unarmored threespine stickleback and its habitat. Impacts such as increased chemical pollutants, sedimentation, and increased human activity will be mitigated by measures such as the protection and management of the River Corridor SMA, creation of buffer areas between the River Corridor SMA and development, water quality requirements, and restrictions on public access. In addition, the technical studies conducted by ENTRIX (2009) concluded that suitable unarmored threespine stickleback habitat would not be significantly affected by the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas under any of the alternatives. Further, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the

proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The PACE study determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status fish species would be maintained and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected.

Additionally, following build-out of the Specific Plan areas, the physical changes to the River corridor and surrounding watershed could affect fish species and habitat downstream of the Project through short- or long-term hydrologic, geomorphic, or water quality alterations of the river. Newhall Ranch WRP will be a near-zero discharge facility, and only limited discharge from the WRP to the Santa Clara River will occur during the winter months. If the discharge from the Newhall Ranch WRP substantially lengthens the duration of seasonal river connectivity in the "Dry Gap" and causes partially-armored threespine stickleback to intermittently migrate further upstream into the Project reach, it would be considered a significant secondary impact of the Project due to the potential for genetic introgression into the unarmored threespine stickleback population in the Project reach. Based on an analysis of post-development conditions within the Dry Gap (GSI Water Solutions, 2008), it was determined that the future WRP discharge will not affect the seasonality (*i.e.*, ephemeral nature) of flows through the Dry Gap and genetic introgression effects are not anticipated. Since the greatest threat to the genetic integrity of unarmored threespine stickleback is introgression resulting from intermittent migration of downstream partially-armored threespine stickleback populations, the maintenance of ephemeral conditions in the Dry Gap creates an essential natural geographic barrier that prevents unarmored threespine stickleback populations upstream from hybridizing and the loss of the species' genetic integrity.

All mitigation measures listed below are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-7 IMPACTS TO INDIVIDUALS – UNARMORED THREESPINE STICKLEBACK

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the impacts to unarmored threespine stickleback through facilities design requirements, pre-development surveys, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-44 requires that drainages with flows greater than 2,000 cfs have soft bottoms. Bank protection will be of ungrouted rock or buried bank stabilization, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.

SP-4.6-53 requires updated surveys for special-status plants, animals, and vegetation communities as determined necessary by the County whenever construction maps are submitted. Based on the results of the surveys, additional conditions and mitigation measures may be required.

SP-4.6-54 requires that prior to development within or disturbance to occupied unarmored threespine stickleback habitat, a formal consultation with the USFWS shall occur.

SP-4.6-55 obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats.

SP-4.6-57 requires that, where bridge construction is proposed and water flow will be temporarily diverted, blocking nets and seines be used to control and remove fish from the area of activity. All fish captured during this operation will be stored in tubs and returned unharmed to the river after construction activities are complete.

SP-4.6-58 requires that in order to limit impacts to water quality, the Specific Plan shall conform to all provisions of required NPDES permits and water quality permits required by the RWQCB.

SP-4.6-59 requires consultations with the County of Los Angeles and CDFG before surveys, after surveys, at subdivision map approval, and prior to development or disturbance to habitats occupied by special-status species. Based on the results the consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will mitigate the impacts to unarmored threespine stickleback individuals. These mitigation measures include pre-development focused surveys for the unarmored threespine stickleback, coordination with the USFWS and CDFG, channel diversion requirements, biological monitoring, avoidance of flowing water, design guidelines for bridges and culverts, and other BMPs. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation. Specifically, Mitigation Measure WQ-1 in **Section 4.4,** Water Quality, and Mitigation Measures GRR-1 through GRR-7 in **Section 4.2**, Geomorphology and Riparian Resources, provide additional measures to reduce the impacts to unarmored threespine stickleback individuals. These mitigation measures include implementation of Project BMPs (including runoff control, conservation of natural areas, minimization of stormwater runoff pollutants of concern, prevention of slope and channel erosion, and education and signage

to discourage illegal dumping to the storm drains), and other measures to minimize impacts to riparian resources and geomorphology (peak storm flow control, bridge span and clearance guidelines, maintenance minimization, channel design to minimize erosion potential, sediment and debris control, reintroduction of sediments for beach replenishment, and a Geomorphology Monitoring and Management Plan).

BIO-43 provides for the biological surveying of aquatic habitats within 300 feet of construction sites and access roads for the presence of special-status fishes, at least 10 days prior to commencing construction, unless fish spawn has occurred or juvenile fishes are present; in which case, construction activities would be suspended. BIO-44 requires that temporary crossings or access across the River be constructed outside of the winter season and not during spring periods when fish spawning is occurring, and be consistent with a Stream Crossing and Diversion Plan that outlines the following: the timing and methods for pre-construction fish surveys, a detailed description of the diversion methods, fish exclusion techniques, methods to maintain fish passage, channel habitat enhancement design, fish stranding surveys, and the techniques for the removal of temporary crossings prior to winter storm flows.

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-46 requires that a qualified biologist will inspect diversion or dewatering activities for stranded fish or other aquatic organisms.

BIO-47 provides for the construction of additional slow moving water habitats upstream and downstream of any river crossing or bridge construction area, to provide refuge for special-status fishes during construction.

BIO-48 requires the design and installation of bridges, culverts, or other structures to not impair the movement of fish and aquatic life, and requires provisions for a low flow channel where velocities are less than 2 fps to allow fish passage.

BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows.

BIO-70 provides for construction plans that will include erosion control plans and dust control plans, specifications, and details, along with an overall Project SWPPP. Together, these documents shall include measures to ensure that impacts (*e.g.*, the introduction of chemical pollutants, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology) to vegetation communities and special-status plant species are avoided or minimized during construction.

BIO-71 requires that development areas have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and aquatic wildlife species. Dust control plans shall be prepared prior to initiation of construction activities and shall comply with SCAQMD Rule 403 (SCAQMD 2005).

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to unarmored threespine stickleback individuals would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7. .

IMPACT 4.5-8 LOSS OF HABITAT – UNARMORED THREESPINE STICKLEBACK

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the temporary loss of habitat for unarmored threespine stickleback through RMDP facilities design requirements, consultation with the USFWS, and conformance with federal and state permits to protect water quality.

SP-4.6-44, SP-4.6-54, SP-4.6-55, and SP-4.6-58, as described above, will be implemented to mitigate impacts related to unarmored threespine stickleback through facilities design requirements, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the temporary loss of habitat for the unarmored threespine stickleback. These measures refer to stream diversions, BMPs, and facilities design. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

Finding of Significance for Loss of Habitat After Mitigation

Permanent impacts (Loss of Habitat) would not be significant because impacts will be predominantly outside of the stream channel and be limited with respect to aquatic habitat. After mitigation, temporary impacts to unarmored threespine stickleback habitat would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-9 SECONDARY IMPACTS – UNARMORED THREESPINE STICKLEBACK

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for both short-term secondary impacts to the unarmored threespine stickleback, such as altered hydrology and water quality, and long-term secondary impacts, such as potential physical changes in the River; altered base and flood flows; biochemical, substrate, and temperature alterations; vegetative changes, such as invasive plant species; increased human activity; and impacts from fecal material from pet, stray, and feral cats and dogs.

Most importantly, the River Corridor SMA will be protected and managed to preserve aquatic and riparian resources, including the unarmored threespine stickleback and its habitat, through a series of mitigation measures. SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats, including aquatic habitats used by the unarmored threespine stickleback.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. These measures will provide a buffer between human activity and aquatic habitats supporting the unarmored threespine stickleback. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be

incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-20 requires that all grading perimeters within the River Corridor SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian resources (including aquatic habitats) outside the grading area in the River Corridor SMA.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA.

SP-4.6-27 prohibits grazing in the River Corridor SMA except as a long-term resource management activity. Controls on grazing will help protect water quality in aquatic habitats used by the unarmored threespine stickleback.

In addition, SP-4.6-44 (drainage design), SP-4.6-55 (state and federal wetlands permits), and SP-4.6-58 (NPDES/RWQCB permits), as described above, will be implemented to protect natural flows and water quality, and SP-4.6-54 will require formal consultation with USFWS prior to impacts.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to unarmored threespine stickleback, including short-term impacts to hydrology and water quality and long-term impacts, such as effects on movement; increased human activity; fecal material from pet, stray, and feral cats and dogs; habitat degradation by exotic plants; and increased predation by exotic predators. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to

2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. Although these measures primarily refer to riparian habitats, the riparian/aquatic communities in the River Corridor SMA will be addressed comprehensively in a manner that protects and enhances habitat for the unarmored threespine stickleback, including management of invasive species, such as giant reed.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

BIO-63 will be implemented to mitigate impacts by pet, stray, and feral cats and dogs, such as fecal material entering the aquatic system. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to the unarmored threespine stickleback and its habitat would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

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AMERICAN PEREGRINE FALCON (BCC, CE, CFP)

Life History

The peregrine falcon (*Falco peregrinus*) is listed as state endangered and is a California Fully Protected species. On October 11, 2007, the California Fish and Game Commission designated the American peregrine falcon (*F. p. anatum*) as a candidate for delisting under CESA (California Regulatory Notice Register 2007).

The peregrine falcon has a worldwide distribution that is more extensive than that of any other bird. The only regions this species does not occupy as a breeder are the Amazon Basin, the Sahara Desert, most of the steppes of central and eastern Asia, and Antarctica. In North America, the peregrine falcon breeds from Alaska to Labrador, southward to Baja California and other parts of northern Mexico, and east across central Arizona through Alabama. Its distribution is patchy in North America, and populations in the eastern United States are still chiefly in urban areas (AOU 1998; White *et al.* 2002). The distribution is likely to change as the species reoccupies areas from which it was formerly extirpated (White *et al.* 2002). The former breeding range also included Ontario, southern Quebec, the Canadian Maritime Provinces, and all of the eastern United States south to northern Georgia. In the Americas, the species winters from southern Alaska to Tierra del Fuego in southernmost South America (AOU 1998). There are 19 subspecies of peregrine falcons, three of which occur in North America (White *et al.* 2002). This account addresses only the American subspecies, *F. p. anatum*.

In California, the American peregrine falcon is an uncommon breeder or winter migrant throughout much of the state. It is absent from desert areas (Zeiner *et al.* 1990A). Active nests have been documented along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. As a transient species, the American peregrine falcon may occur almost anywhere that suitable habitat is present (Garrett and Dunn 1981).

Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. Sites are often located near rivers or lakes (AOU 1998; Brown 1999; Snyder 1991). Riparian areas, as well as coastal and inland wetlands, are also important habitats year-round for this species. The species breeds mostly in woodland, forest, and coastal habitats (Zeiner *et al.* 1990A; Brown 1999). Within southern California, American peregrine falcons are primarily found at coastal estuaries and inland oases during migration periods and during the winter months (Garrett and Dunn 1981). The high mobility, extensive hunting areas, remote nest sites, and preferences of individual pairs make it difficult to identify what might be typical peregrine falcon habitat (USFWS 1984), and no particular terrestrial biome appears to be preferred over others (White *et al.* 2002).

The diet of the American peregrine falcon primarily consists of birds that, while most are pigeon-sized, can be as small as hummingbirds or as large as small geese (White *et al.* 2002). Other prey species include jays, flickers, meadowlarks, starlings, woodpeckers, shorebirds, and other readily available birds. The American peregrine falcon may feed on large numbers of rodents when present (Brown 1999).

Breeding requires cliffs or suitable surrogates that are close to preferred foraging areas. Nests are typically located in cliffs between 50 and 200 meters (164 to 656 feet) tall that are prominent in the landscape. American peregrine falcons have also been known to nest in trees and on small outcrops. Tall buildings, bridges, or other tall man-made structures are also suitable for nesting (White *et al.* 2002). The nest site usually provides a panoramic view of open country and often overlooks water. It is always associated with an abundance of avian prey, even in an urban setting. A cliff or building nest site may be used for many years (Brown 1999). The nest site itself usually consists of a rounded depression or scrape with accumulated debris that is occasionally lined with grass (Call 1978). Higher-quality nest sites confer greater protection from the elements and have greater breeding success (Olsen and Olsen 1989).

The American peregrine falcon was formerly critically endangered after populations declined drastically between 1950 and 1970. The principal cause of the American peregrine falcon population decline was the use of organochlorine pesticides, especially DDT and its metabolite DDE, which interfered with their calcium metabolism and resulted in eggs with thin shells that were easily broken (USFWS 2003). Nesting sites also have been abandoned due to human encroachment or increased levels of nearby activity (Hickey 1969; Bond 1946), although this did not contribute significantly to historical population declines. In recent years, the peregrine falcon population in the United States has been increasing and the species is re-occupying areas from which it was previously extirpated (White *et al.* 2002). However, increases in human activity and other urban-related effects, including pesticides, which may cause secondary poisoning or reduce prey abundance, may have local effects on nesting and foraging behavior.

Survey Results

Avian surveys were conducted in the riparian areas of the Santa Clara River and Castaic Creek from 1988 through 2008 (see **Table 4.5-6**). Additional avian surveys were conducted by Bloom Biological, Inc. throughout upland areas the Project area in 2007 and 2008 (Bloom Biological 2007A, 2008). One American peregrine falcon was observed hunting along the Santa Clara River corridor near the Grapevine Mesa area within the Newhall Ranch Specific Plan area by Guthrie in July 2000 (Guthrie 2000C), and an adult male was observed hunting over the Wolcott agricultural field by Bloom Biological, Inc. in late December 2007 (Bloom Biological 2008). No other occurrences of this species have been documented on site during annual bird surveys between 1988 and 2008. American peregrine falcons have never been documented nesting in the Project area. This species is sensitive to human disturbance and usually nests in areas that are

remote from human activities, such as cliffs, although tall buildings, bridges, or other tall man-made structures are also suitable for nesting if they are protected from human disturbance. Such features that would be suitable for nesting by the peregrine falcon are absent in the Project area; therefore it is not expected to nest on site.

Guthrie's surveys were focused on riparian habitats and coastal scrub habitats, but the American peregrine falcon also uses open habitats, such as grassland and agricultural areas, as observed by Bloom Biological, Inc. Bulrush–cattail wetland, cismontane alkali marsh, open water, California annual grassland, purple needlegrass, and agriculture areas are suitable foraging habitat for the American peregrine falcon in the Project area. A total of 3,937 acres of suitable foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 150 acres of suitable foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 77 acres of suitable foraging habitat would be temporarily impacted. Suitable nesting habitat for the American peregrine falcon is not present within the RMDP area.

Because this species is a transient visitor to the site and only known to forage on site and uses a large variety of habitats for foraging, and because the construction of RMDP facilities would be phased over a long period of time, thousands of acres of suitable foraging habitat in the Project vicinity would be available for this species at any given time. Therefore, the permanent and temporary loss of foraging habitat as a result of implementation of the RMDP and the SCP would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species

on site or rangewide; interfere with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,191 acres of suitable foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 55.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). Suitable nesting habitat for the American peregrine falcon is not present within the Project area.

A relatively large amount and percentage of suitable on-site foraging habitat for the American peregrine falcon would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This species has not been documented to nest on site, but American peregrine falcons have been observed foraging during winter months and migration periods. Wintering and migrating American peregrine falcons use open habitats throughout the state and become somewhat nomadic during the non-breeding period in the southern portion of the state and are not restricted to any one migration route or wintering habitat area. Large areas of the River corridor will remain as open space and provide foraging habitat for this species. For these reasons, the loss of wintering and migratory foraging habitat, while adverse, would not have a substantial adverse effect on this species; would not cause the species population to drop below self-sustaining levels on site or rangewide; would not interfere substantially with the movement of the species between important habitat areas; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,342 acres (59.5%). A large amount and percentage of suitable on-site foraging habitat for the American peregrine falcon would be permanently lost as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Although this species has not been documented to nest on site, isolated occurrences of American peregrine

falcons have been observed foraging during winter months and migration. Large areas of the River corridor will remain as open space and provide foraging habitat for this species. Thus, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because American peregrine falcons are highly mobile, it is extremely unlikely that RMDP-related construction/grading activities would result in injury or mortality of individuals occupying this habitat during construction and/or grading activities. This species has not been observed nesting on site, and suitable nesting habitat for this species is limited in the RMDP area, primarily in the Santa Clara River corridor. Therefore, RMDP-related construction/grading activities would not result in direct mortality of individuals or destruction of nests. However, some individuals and their prey (*e.g.*, waterfowl) may be inhibited from foraging in areas near construction activities, resulting in a potential adverse effect on foraging behavior. Implementation of the SCP would not directly impact this species.

The American peregrine falcon is known to forage on site, but has not been documented to nest on site. Construction/grading activities associated with implementation of the RMDP would not result in a substantial direct adverse effect on this species; would not have the potential to substantially reduce the habitat of the species on site or rangewide; would not interfere with the movement of the species between important habitat areas; would not cause the species population to drop below self-sustaining levels on site or rangewide; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts to foraging individuals (Impacts to Individuals) would be adverse but not significant. .

Indirect Permanent Impacts

Because American peregrine falcons are highly mobile, it is extremely unlikely that construction/grading activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas would result in injury or mortality of individuals occupying this habitat. In addition, because no suitable nesting habitat for the species exists within these areas, construction/grading activities would not result in mortality of individuals or destruction of nests. However, some individuals and their prey (*e.g.*, waterfowl) may be inhibited from foraging in areas near construction activities, resulting in a potential adverse effect on foraging behavior.

The American peregrine falcon is known to forage on site, but has not been documented to nest on site. Construction/grading activities would not have a substantial adverse effect on this species; would not cause the species population to drop below self-sustaining levels on site or rangewide; would not interfere with the movement of the species between important habitat areas; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts to foraging individuals (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

In the short term, construction-related impacts, such as noise, dust, nighttime lighting, and increased human activity, associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could inhibit foraging by the American peregrine falcon, either directly or indirectly (by affecting its prey species). Because this species is not expected to nest within the Project area due to limited suitable nesting habitat and avoidance of human activities, nesting would not be affected. Potential long-term secondary impacts to foraging may occur due to increased human activity in the area and use of pesticides. Although the species uses the Project area for foraging, large areas of the River corridor will be preserved in addition to substantial open areas adjacent to the River corridor, these potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; cause the species population to drop below self-sustaining levels on site or rangewide; interfere substantially with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable foraging habitat for the American peregrine falcon (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 133 acres (3.4%) of permanent loss and 108 acres of temporary loss;

- Alternative 4 – 122 acres (3.1%) of permanent loss and 118 acres of temporary loss;
- Alternative 5 – 157 acres (4.0%) of permanent loss and 100 acres of temporary loss;
- Alternative 6 – 154 acres (3.9%) of permanent loss and 107 acres of temporary loss; and
- Alternative 7 – 68 acres (1.7%) of permanent loss and 345 acres of temporary loss.

Compared to Alternative 2, which would result in 150 acres (3.8%) of permanent foraging habitat loss and 77 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat reduced, under Alternative 5 would be marginally greater, under Alternative 6 would not be substantially greater, and under Alternative 7 would be substantially reduced. Alternatives 3 through 7 would have greater temporary impacts, with Alternative 7 substantially greater than the other alternatives. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries as well as other reductions to the Project footprint under Alternative 7 that would result in substantially reduced permanent impacts and relatively greater temporary impacts to suitable foraging habitat for the American peregrine falcon compared to the other alternatives.

Because the overall loss of foraging habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude or reduced compared to the overall habitat loss under Alternative 2, the impacts under these alternatives would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable foraging habitat for the American peregrine falcon (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,086 acres (53.0%) of permanent loss;
- Alternative 4 – 2,010 acres (51.0%) of permanent loss;
- Alternative 5 – 1,974 acres (49.4%) of permanent loss;

- Alternative 6 – 1,845 acres (46.9%) of permanent loss; and
- Alternative 7 – 1,503 acres (38.2%) of permanent loss.

Compared to Alternative 2, which would result in 2,191 acres (55.6%) of permanent loss of foraging habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the American peregrine falcon compared to the other alternatives.

Because the overall permanent loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar or somewhat reduced compared to the overall habitat loss under Alternative 2, the impacts under these alternatives would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable foraging habitat for American peregrine falcon:

- Alternative 3 – 2,219 acres (56.4%) of permanent loss;
- Alternative 4 – 2,133 acres (54.2%) of permanent loss;
- Alternative 5 – 2,104 acres (54.4%) of permanent loss;
- Alternative 6 – 1,999 acres (50.8%) of permanent loss; and
- Alternative 7 – 1,571 acres (39.9%) of permanent loss.

Compared to Alternative 2, which would result in 2,342 acres (59.5%) of combined direct and indirect permanent loss of foraging habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions Project footprint for the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would result in reduced impacts to suitable habitat for the American

peregrine falcon compared to the other alternatives. For the reasons described above for indirect impacts under Alternatives 3 through 7, the combined direct and indirect permanent impacts to foraging habitat for the American peregrine falcon as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would not have a substantial adverse affect on this species; therefore, the impacts under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for impacts to American peregrine falcon individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2. Because this species does not nest on site, construction/ grading activities would not result in injury or mortality of individuals or destruction of nests. However, some individuals and their prey (*e.g.*, waterfowl) may be inhibited from foraging in areas near construction activities, resulting in a potential adverse effect on foraging behavior. Although the American peregrine falcon forages on site, substantial undeveloped open space will be preserved in the River corridor and open areas adjacent to the River corridor. Construction/grading activities would not have a substantial adverse effect and, therefore, impacts to individuals under Alternatives 3 through 7 would adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar impacts due to short-term construction-related activities (noise, dust, and increased human activity) and long-term effects due to urban development, including increased human activity and pesticides. Although the American peregrine falcon forages on site, substantial undeveloped open space will be preserved in the River corridor and open areas adjacent to the River corridor, these potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; therefore, short-term and long-term secondary impacts under Alternatives 3 through 7 would be adverse but not significant.

Mitigation Strategy and Summary

Although no mitigation is required for impacts to American peregrine falcon individuals and habitat because impacts were determined to be adverse but not significant, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration,

enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area—areas that will form a large, contiguous open space system totaling approximately 6,300 acres comprised of riparian and upland habitats that provide foraging habitat for American peregrine falcon. This set-aside also will reduce short-term and long-term secondary effects, such as increased noise, lighting, and increased human activity because birds would have substantial alternative habitat in which to forage. In addition, short-term construction impacts would be reduced through biological monitoring and controls on nighttime lighting. Long-term effects such as potential secondary poisoning from pesticides would be controlled through an integrated pest management (IPM) plan and all lighting near open space areas would be downcast.

CALIFORNIA CONDOR (FE, CE, CFP)

Life History

The California condor (*Gymnogyps californianus*) is listed as both state- and federally endangered and is a California Fully Protected species. The southern California population of the California condor is largely confined to the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County, the Transverse Ranges, Tehachapi Mountains, and southern Sierra Nevada (Zeiner *et al.* 1990A). The California condor has also historically occurred in northern Baja California, Mexico; northern California; Oregon; Washington; and south British Columbia, Canada in the early nineteenth century (Harris 1941; Koford 1953; Wilbur 1978; Kiff 2000; Snyder and Snyder 2000). Elevations of recent nest sites varied from approximately 600 to 1,830 meters (1,969 to 6,004 feet) AMSL. Prior to all California condors being removed from the wild for captive breeding in the late 1980s, nonbreeding California condors often moved north to Kern and Tulare counties in April and returned south in September to winter in the Tehachapi Mountains, Mount Pinos, and Ventura and Santa Barbara counties (Zeiner *et al.* 1990A). Since that time, California condors have been reintroduced into suitable habitat in eastern Ventura County as well as in the Ventana Wilderness area along the coast south of San Francisco.

California condors require vast expanses of open savannah, grasslands, and foothill chaparral, with cliffs, large trees, and snags for roosting and nesting (Zeiner *et al.* 1990A). As opportunistic scavengers, California condors travel up to 225 kilometers (140 miles) per day (Koford 1953; Wilbur 1978; Meretsky and Snyder 1992; Snyder and Snyder 2000). The California condor requires an adequate food supply, open habitat in which food can readily be found and accessed, and reliable air movements that allow extended soaring flight (Snyder and Schmitt 2002). Most foraging has been documented in grasslands and oak woodlands, where individuals can easily launch into flight from nearly any location by running downhill, and where winds deflected by topographic relief usually provide the uplift necessary for extended flight (Snyder and Schmitt 2002). Most California condors forage within 50 to 70 kilometers (31 to 43 miles) of nesting areas, with core foraging areas ranging around 2,500 to 2,800 square kilometers (1,553 to 1,740 miles). This wide-ranging foraging area appears to be an adaptation to unpredictable food supplies. Most remaining California condors in the 1970s and 1980s were familiar with the primary foraging areas, which consisted of an area of 7,000 square kilometers (4,350 miles) in the foothills of the southern San Joaquin Valley and auxiliary valleys in San Luis Obispo, Santa Barbara, Kern, and Tulare counties (Meretsky and Snyder 1992). After 1982, most visual sightings of foraging occurred in the Elkhorn Hills/Cuyama Valley/Carrizo Plain complex and in the foothills of the southern San Joaquin Valley (Meretsky and Snyder 1992).

The California condor primarily feeds on mammalian carrion, although remains of reptiles and birds have been occasionally found within nests (Collins *et al.* 2000). California condors are scavengers of fresh medium- to large-sized carcasses, such as sheep, cattle, deer, and elk (Koford 1953; Snyder and Snyder 2000; Collins *et al.* 2000). California condors are not known to feed on vehicle-killed animals, but in recent years, hunter-shot mule deer, shot or poisoned coyotes, and ground squirrels were consumed when available (Snyder and Schmitt 2002).

California condors typically breed annually but frequently breed less often. Observations of new pair formations have been observed in late fall and early winter (Snyder and Schmitt 2002). Once pairs have been formed, the California condors stay together year round for multiple years. California condors lay only one egg; this can occur from the last week of January through the first week of April, with an incubation period averaging 57 days. The hatching of the eggs ranges between the last week of March and the first week of June. The chicks are tended by both parents until the chicks are fledged, which occurs five and a half to six months after hatching. The chicks are fully dependent on their parents for approximately another six months, ending roughly a year after hatching, from early March to mid-May (Snyder and Schmitt 2002).

Critical Habitat

Critical habitat for the California condor was designated by the USFWS on September 22, 1977 (42 FR 47840–47845). Critical habitat was not designated for the Project area. The nearest critical habitat area is the Sespe–Piru Condor Area. Because there is no critical habitat designation for the Project area, critical habitat is not further addressed in the California condor analysis in this EIS/EIR.

Recovery Plan

The California Condor Recovery Plan was published by the USFWS on February 26, 1980 (USFWS 1980). The Recovery Plan identified several objectives to meet the overall objective of stopping the decline of the species and increasing the population to a secure level: (1) reduce mortality to the lowest level possible; (2) substantially increase productivity (*i.e.*, reproductive success); (3) retain adequate nesting, roosting, and feeding habitat for each subpopulation; and (4) include habitat for future growth and expansion of each subpopulation. A series of geography-specific activities was identified in the Recovery Plan. The nearest activity area relative to the Project area is the Sespe–Piru Condor Area. Because no recovery activities were identified for the Project area and nearby vicinity, the Recovery Plan is not further addressed in the California condor analysis in this EIS/EIR.

Threats

The total population of the California condor in the early 1980s was estimated to be fewer than 20 individuals (Ogden 1982), and by the mid-1980s, wild California condors were being trapped

for captive breeding purposes. Snyder and Schmitt (2002) suggested that lead poisoning was likely the most important cause of the recent decline of the species, and it appears to be a continuing problem for reestablishing viable wild populations. Meretsky *et al.* (2000, 2001) confirmed the threat of lead poisoning in birds released to the wild in Arizona and California, with five deaths attributable to lead and a total of 16 emergency chelations of acutely poisoned birds occurring through September 2000. Other sources of mortality of released birds through 2000 include collisions, poisoning due to ingestion of antifreeze, drowning, and shooting (Snyder and Schmitt 2002). It has been observed that individuals landing in human-altered environments (including parking lots or buildings) had had inappropriate familiarity (imprinting) with humans while in captivity prior to release. An increase in power lines and utility poles, which can result in collisions and electrocution; microtrash (*e.g.*, bottle caps, pull tabs, broken glass, cigarette butts, small plastic items, lead bullets, and shell casings, which condors can ingest); long-term habitat degradation; and contaminants other than lead and antifreeze also have the potential to affect individuals.

Survey Results

Surveys for the California condor were included as part of other raptor and avian species surveys that were conducted along the Santa Clara River and throughout upland areas of the Project area (Bloom Biological 2007A, 2008). While California condor foraging flights have been known to take individuals over the Santa Clarita Valley, these flights are generally at high altitudes. A reliable source of updrafts and thermals appears to be lacking in the Project area. Until April 2008, California condors had not been known to nest or land within the Project area within the last 25 years (Bloom Biological 2007A, 2008). In April 2008, a California condor was observed feeding on a dead calf in a Potrero side canyon by wildlife biologist Chris Niemela (Carpenter 2008) (**Figure 4.5-5**, Listed and California Fully Protected Wildlife Species Occurrences). The USFWS also provided information to Bloom that California condors fitted with GPS transmitters had landed on Newhall Ranch on several days from April through July 2008 (Root 2008). In January 2009, up to five California condors were detected feeding on a dead calf in the middle section of Potrero Canyon south of Potrero Mesa between January 27 and 30 (Niemela 2009). A follow-up visit by Chris Niemela was conducted at the request of the USFWS to photodocument the calf carcass and site where the feeding occurred. No other mention of California condor observations have been made during numerous other plant and wildlife surveys conducted over the past 30 years within various portions of the Project area.

The California condor requires habitat that contains an adequate food supply (carrion), open space areas, and reliable winds and air movement to allow for long-duration soaring during foraging. Nest habitat typically includes cliff faces and, occasionally, large tree snags with cavities. Condors are not expected to nest in the Project area due to the general lack of adequate nesting habitat and likely only opportunistically forage in the Project area. In general, the Project area does not support significant populations of large mammals across the broad

landscape area. Because this species has the potential to periodically land anywhere within the Project area where carrion is present, suitable nesting and foraging habitat was not quantified for this EIS/EIR.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

There is little suitable foraging and nesting habitat for California condor within the Project area due to the lack of adequate prey. Some suitable foraging habitat is present in the upper regions of the High Country SMA and Salt Creek area where prey can occur, but these areas would not be affected by implementation of the RMDP and the SCP.

Condors have been observed on two separate occasions since April 2008 in the Potrero Canyon area. Condors were observed feeding on dead calves in both instances. In addition, several radio-tagged condors were recorded landing on Newhall Ranch (Root 2008). However, due to the general lack of prey and limited foraging opportunities within the RMDP area, construction and/or grading activities associated with development of the RMDP would not have a substantial direct adverse effect on habitat of this species; impede the use of nest sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

As stated above for direct permanent and temporary impacts to loss of habitat, there is limited nesting habitat and foraging opportunities for California condor within the Project area that would be developed. Suitable foraging habitat is present in the High Country

SMA and Salt Creek area, but these areas would not be affected by build-out of the Specific Plan, VCC, or Entrada planning areas. These areas where suitable foraging habitat is present support mule deer and other prey items.

Due to the lack of prey and limited foraging opportunities within the Project area, the permanent loss of vegetation within the Specific Plan, VCC, and Entrada planning areas is not expected to substantially reduce suitable habitat for the California condor. Condors forage over vast areas, and large expanses of open space remain in the Project area. In addition, condors that occur in the region are feeding primarily on carrion at USFWS-managed feeding stations in the Los Padres National Forest. However, condors are increasing their current range and moving into areas not recently inhabited by this species. Therefore, build-out of these areas would not have a substantial adverse effect on the habitat of this species; impede the use of nest sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

As stated above for direct and indirect permanent impacts to loss of habitat, there is little suitable nesting habitat and there are limited foraging opportunities for California condor within the Project area (developed area). Some suitable foraging habitat is present in the High Country SMA and Salt Creek area, but these areas would not be affected by build-out of the Specific Plan, VCC, or Entrada planning areas. Therefore, the combined direct and indirect permanent impact to vegetation communities would not have a substantial adverse effect on the habitat of this species; impede the use of nest sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

California condors have recently been observed foraging in the Project area in Potrero Canyon. However, the species is not expected to roost or nest due to lack of suitable habitat. Roost sites have not been observed in the Project area. Condors often return to traditional sites for perching and roosting and, if present, would likely have been

detected. Traditional roost sites include cliffs and large trees and snags (roost trees are often conifer snags 40 to 70 feet tall), often near feeding and nesting areas. These areas are generally absent from the Project area, although some potential roost area occurs in the High Country SMA. Although they can sporadically forage in areas affected by the RMDP, it is highly unlikely that activities associated with implementation of the RMDP would result in direct injury or mortality of individual California condors. Construction debris, litter, leaking equipment, or road kill can attract this species to the proposed Project. This could subject condors to strikes by construction vehicles. Condors are curious birds and have been documented in close association with oil pumps and human activity on the Los Padres National Forest. During cleanup activities at trash sites, condors have been observed sitting on guard rails adjacent to the cleanup activities. Adverse effects to condors have also been documented by the animal's collection of microtrash (*i.e.*, broken glass, paper and plastic waste, small pieces of metal). This waste is often brought back to nest sites where young birds ingest the material. This can lead to mortality of young birds. Ethylene glycol, a component in antifreeze and petroleum products can also be ingested by condors, which could result in injury or mortality.

While there is the potential for injury or mortality to condor individuals from Project activities, this potential is considered to be extremely low due to the generally sporadic occurrence on site. Implementation of the SCP would not directly impact this species. If an individual were injured or killed, this would be a substantial adverse effect (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

As with the RMDP and the SCP, it is highly unlikely that activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas would result in direct injury or mortality of individual California condors. However, as described above, construction activities could attract condors, exposing them to potential risks such as vehicle strikes and ingestion of microtrash and pollutants that could cause injury or mortality. Foraging behavior also can be affected; however, not substantially, because of this species' infrequent use of the site. If an individual were injured or killed, this would be a substantial adverse effect (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term construction-related secondary impacts that could affect California condors behaviorally and physically include noise, harassment by humans, and ingestion of contaminants, trash, and/or debris associated with construction sites. Ingestion of contaminants could result in injury or mortality, as described above.

Over time, as more condors are released into the wild in the Sespe Wilderness area to the northwest of the Project area and as these birds continue to forage over large distances in the region, individuals are expected to occasionally forage over suitable habitat within and adjacent to build-out areas, as evidenced by the single observation of a feeding condor in April 2008 in a Potrero side canyon (Carpenter 2008) and other documented landings in the Project area (Root 2008). Long-term secondary impacts associated with the development include phone towers, power lines, and utility poles, which could increase the potential for collisions; increased microtrash within residential and commercial areas, and potentially areas used for recreation, which has been known to attract and be ingested by California condors, causing sickness or mortality; and the presence of various contaminants, such as antifreeze, which have been known to be ingested by California condors, causing sickness or mortality. Increased human and pet activity in open space areas can result in inadvertent harassment of California condors and increased access to remote parts of the High Country SMA through road improvements or during construction activities can result in increased human presence, illicit shooting, or hunting. In addition, termination of cattle grazing in open space areas (except for the purpose of resource management) would reduce potential prey. These short-term and long-term secondary impacts can result in physical impacts to individuals (*i.e.*, sickness or mortality) and/or inhibit the California condor from foraging in the Project region, resulting in a substantially adverse effect on the species and/or reduction in suitable range for the California condor in the Project area (significance criteria 4 and 7). These short-term and long-term secondary impacts would be significant, absent mitigation.

It was noted above that termination of cattle grazing in open space areas (except for the purpose of resource management) would reduce potential prey, but that this would not be a substantially adverse effect because foraging by condors on site is occasional.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Generally, Alternatives 3 through 7 would have similar to fewer impacts to vegetation communities compared to Alternative 2. The outer boundaries of the Project footprints of these alternatives also would be similar or reduced compared to Alternative 2. None of the other alternatives would affect the upper regions of the High Country SMA and Salt Creek areas that can support foraging by the California condor. For these reasons, Alternatives 3 through 7 would have similar potential for loss of foraging and nesting habitat for the California condor as Alternative 2. The direct permanent and temporary impacts to habitat resulting from implementation of the RMDP and the SCP; indirect permanent impacts to habitat resulting from implementation of the Specific Plan, VCC, and Entrada planning areas; and combined direct and indirect permanent impacts to habitat, therefore, would be adverse but not significant for Alternatives 3 through 7.

Impacts to Individuals

As with Alternative 2, it is highly unlikely that activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas possibly could result in direct injury or mortality of individual California condors under Alternatives 3 through 7. However, as described above, construction activities could attract condors, exposing them to potential risks such as vehicle strikes and ingestion of microtrash and pollutants that could cause injury or mortality. Foraging behavior also can be affected; however, not substantially, because of this species' infrequent use of the site. If an individual were injured or killed, this would be a substantial adverse effect (significance criterion 1). Impacts to individuals would be significant, absent mitigation.

Secondary Impacts

Similar to Alternative 2, short-term construction-related secondary impacts, such as noise and increased human activity, are unlikely to affect the California condor under Alternatives 3 through 7. However, condors can be attracted to construction sites, where ingestion of microtrash or contaminants could result in injury or mortality, as described above. Long-term secondary effects due to build-out of the Specific Plan, VCC, and Entrada planning areas, would be the same as those under Alternative 2 and can include increased collisions with power lines and utility poles, and potentially electrocution; ingestion of microtrash and contaminants such as antifreeze; increased human and pet activity; and loss of potential prey due to termination of cattle grazing (except for the purpose of resource management). These short-term and long-term secondary impacts can result in physical impacts to individuals and/or inhibit the California condor from foraging in the Project region, resulting in a substantially adverse affect on the species and/or reduction in suitable range for the California condor in the Project area. These short-term and long-term secondary impacts would be significant, absent mitigation, under Alternatives 3 through 7.

It was noted above that termination of cattle grazing in open space areas (except for the purpose of resource management) would reduce potential prey, but that this would not be a substantially adverse effect because foraging by condors on site is only occasional.

Mitigation Strategy and Summary

The Project would result in two significant impacts to the California condor, absent mitigation: (1) direct and indirect impacts to individuals during constructions; and (2) long-term secondary impacts to individuals.

Until recently, condors have not been detected landing in the Project area. There are two observations of condors foraging on dead cattle in the Project and several birds have been recorded landing in the Project area since 2008. Therefore, condors are expected to sporadically

forage in the Project area when carrion (*i.e.*, dead cattle or large wildlife) are present. Because this species has been detected, impacts to individuals could occur during construction activities. Construction debris, litter, leaking equipment, or road kill can attract this species to the proposed Project. This could subject condors to strikes by construction vehicles and increase the risk that they could ingest microtrash and contaminants, which could result in injury or mortality. Condors are curious birds and have been documented in close association with oil pumps and human activity on the Los Padres National Forest. During microtrash cleanup activities on U.S. Forest Service lands, condors have been observed sitting on guard rails adjacent to the cleanup activities. Adverse effects to condors have also been documented by the animal's collection of microtrash (*i.e.*, broken glass, paper and plastic waste, small pieces of metal). In addition to potential impacts to adult birds, this waste is often brought back to nest sites where young birds could ingest the material, which could result in injury or mortality. Ethylene glycol, a component in antifreeze and petroleum products can also be ingested by condors, which could result in injury or mortality. To reduce or avoid potential effects to this species, the applicant shall implement measures during construction to monitor for the presence of birds, and collect all litter, small items, vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash—what it is, its potential effects on California condors, and how to avoid the deposition of microtrash. In the event California condors are observed landing in the construction area, all work activities shall be suspended until the bird has left the area. Long-term development-related secondary impacts include an increased potential for collisions with phone towers, power lines, and utility poles, which could result in physical injury or death as a result of the collision or from electrocution. As noted above, ingestion of microtrash and contaminants such as antifreeze can cause sickness or mortality. Increased human and pet activity in open space areas can result in inadvertent harassment of California condors. These long-term secondary impacts will be avoided and minimized through several mitigation measures. Generally, protection, restoration and enhancement, and management habitat in the High Country SMA and Salt Creek area will provide California condors with a large tract (5,720 acres) of relatively undisturbed habitat suitable for foraging. Limited recreational usage and access restrictions within the High Country SMA, control of pets in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect California condors foraging in the High Country SMA and Salt Creek area. Installation of new or relocation of existing phone and cell towers, power lines, and utility poles in the High Country SMA and Salt Creek area will be coordinated with CDFG and structures will be designed in accordance with Avian Power Line Interaction Committee (APLIC 2006) guidelines and operated with anti-perching devices to help reduce collisions and electrocutions of California condors.

The specific mitigation measures for the California condor are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-10 IMPACTS TO INDIVIDUALS – CALIFORNIA CONDOR

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid or reduce impacts to individuals.

Measures Recommended by EIS/EIR

In order to minimize impacts to individuals during construction, BIO-82 will be implemented. This measure requires the applicant to retain a qualified biologist with knowledge of California condors to monitor construction activities within the Project area. The resumes of the proposed biologist(s) will be provided to CDFG for concurrence. This biologist(s) will be referred to as the authorized biologist hereafter. During clearing and grubbing of construction areas, the qualified biologist shall be present at all times. During mass grading, construction sites shall be monitored on a daily basis. The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. If condors are observed landing in the Project area, the applicant shall avoid further construction within 500 feet of the sighting until the animals have left the area, or as otherwise authorized by CDFG and USFWS. All condor sightings in the Project area will be reported to CDFG and USFWS within 24 hours of the sighting. Should condors be found roosting within 0.5 mile of the construction area, no construction activity shall occur between one hour before sunset to one hour after sunrise, or until the condors leave the area, or as otherwise directed by USFWS. Should condors be found nesting within 1.5 miles of the construction area, no construction activity will occur until further authorization occurs from CDFG and USFWS. The applicant shall collect all litter, small items, vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash—what it is, its potential effects to California condors, and how to avoid the deposition of microtrash.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to individual California condor would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-11 SECONDARY IMPACTS – CALIFORNIA CONDOR

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will help offset and reduce potential long-term secondary effects on the California condor. These mitigation measures include protection, restoration and enhancement, and management of habitat in the High Country SMA that can be used as foraging habitat by the California condor, restrictions and limitations on development adjacent to the High Country SMA, and restrictions and limitations on human activity in this area.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

Measures Recommended by EIS/EIR

The EIS/EIR recommends the following additional mitigation measures that will help offset and reduce potential long-term secondary effects on the California condor. These mitigation measures include protection, restoration and enhancement, and management of habitat in the Salt Creek area that can be used as foraging habitat by the California condor and provide restrictions and limitations on utilities.

BIO-19 through BIO-21 refer to habitat protection, restoration and enhancement, and management in the 1,518-acre Salt Creek area in conjunction with the 4,205-acre High Country SMA.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active

intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-81 and BIO-82 will be implemented to mitigate for the impacts from phone towers, power lines, and utility poles as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas. BIO-81 requires the installation/relocation of phone and cell towers and utility poles in the High Country SMA and Salt Creek area to be coordinated with CDFG. The Project applicant shall install utility poles, phone towers, and cell towers in conformance with APLIC standards for collision-reducing techniques.

BIO-82 specifies anti-perching devices to deter California condors and other raptors from perching on all surfaces of new antennae and phone/utility towers. Antennae and towers shall be kept clean of debris, such as cable, trash, and construction materials. BIO-82, as described above, includes construction monitoring measures to avoid injury or mortality of individuals.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, the long-term secondary impacts to the California condor would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

GOLDEN EAGLE (NESTING AND WINTERING) (BCC, WL, CFP)

Life History

The golden eagle (*Aquila chrysaetos*) is a California Fully Protected species, and has a holarctic (northern parts of the both the Old World and New World) distribution, extending as far south as north Africa, Arabia, the Himalayas, North America, and Mexico. It is a partial migrant within this distribution, with the northern breeding birds migrating south in winter and those in more temperate climates remaining within breeding territories year round (Brown and Amadon 1968). In North America, this species breeds locally from northern Alaska eastward to Labrador and southward to northern Baja California and northern Mexico. The species winters from southern Alaska and southern Canada southward through the breeding range. The golden eagle ranges from sea level up to 3,833 meters (11,500 feet) AMSL (Grinnell and Miller 1944).

The golden eagle requires rolling foothills, mountain terrain, and wide arid plateaus deeply cut by streams and canyons, open mountain slopes and cliffs, and rock outcrops (Zeiner *et al.* 1990A). In central California, the golden eagle nests primarily in open grasslands and oak savannahs and, to a lesser degree, in oak woodlands and open shrublands (Hunt *et al.* 1995, 1999). During spring and fall migration in the western United States and Canada, the golden eagle prefers wetlands, agricultural areas, and grassy foothills (Dekker 1985). The winter range in the western United States includes open habitats with native vegetation and the golden eagle avoids urban, agricultural, and heavily forested areas (Millsap 1981; Fischer *et al.* 1984; Craig *et al.* 1986; Marzluff *et al.* 1997B). The golden eagle also uses sagebrush communities, riparian areas, grasslands, and rolling oak savannahs as habitat (Knight *et al.* 1979; Fischer *et al.* 1984; Hayden 1984; Estep and Sculley 1989).

The food supply for this species includes medium to large mammals such as rabbits, hares, and squirrels, and it will also feed on reptiles, birds, and sometimes carrion (Olendorff 1976; Johnsgard 1990).

Golden eagles breed from late January through August with peak breeding occurring in March through July. Nest construction in southern California occurs in fall and continues through winter (Dixon 1937). This species nests on cliffs with canyons and escarpments and in large trees (generally occurring in open habitats) and is primarily restricted to rugged, mountainous country (Garrett and Dunn 1981; Johnsgard 1990). It is common for the golden eagle to use alternate nest sites, and old nests are reused. The nests are large platforms composed of sticks, twigs, and greenery that are often three meters (10 feet) across and one meter (three feet) high (Zeiner *et al.* 1990A). This species has a clutch size of one to three eggs that have an incubation time of 43 to 45 days (Beebe 1974).

The golden eagle was formerly considered common within suitable habitats in California (Grinnell and Miller 1944) and is now considered an uncommon resident throughout California

(Garrett and Dunn 1981). A major threat to this species is human disturbance in the form of habitat loss as well as human development and activity adjacent to golden eagle habitat. Accidental deaths attributed to increased development include collisions with vehicles, power lines, and other structures; electrocution; hunting; and poisoning (Franson *et al.* 1995). Golden eagles avoid developed areas; the golden eagle population in California has undergone a decline within the past century due to a decrease in open habitats (Grinnell and Miller 1944). If nests are disturbed by humans, abandonment of these nests in early incubation will typically occur (Thelander 1974), thereby threatening the species' reproductive success.

Survey Results

Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2008. Areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project area on the south and east (Guthrie 2004C), the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I), the Riverpark site (now referred to as River Village) upstream of the Specific Plan area (Compliance Biology 2003A), and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

On site, this species has been occasionally observed during the annual bird surveys conducted from 1988 through 2008 along the Santa Clara River within the riparian scrub and woodland habitat (Guthrie 1993A, 2000B, 2004H, 2006A; Labinger *et al.* 1997A; Bloom Biological 2007A, 2008). Off site, they were also observed along the Santa Clara River east and west of the Project site (Guthrie 1993A, 1997A, 2004F, 2006A; Labinger *et al.* 1997A). In winter 2008, one juvenile and one pair was seen in upper Potrero Canyon and it is believed that this is likely a resident pair, but no nest site has been identified to date (Bloom Biological 2008). In the fall of 2008, two golden eagles were observed resting on a rugged outcrop in the upper portion of the Salt Creek area in Ventura County (Bedford 2009). The golden eagle has not been observed within the VCC planning area. While no nesting has been observed in the Project area, suitable nesting and foraging habitat is present within the RMDP area; Salt Creek; and the Specific Plan, VCC, and Entrada planning areas. Nesting habitat in the Project area, which may also be used for foraging for this species, includes upland woodlands (mixed oak woodland, coast live oak woodland, and valley oak/grass). There is a total of 1,388 acres of suitable nesting and foraging habitat in the Project area. Suitable habitat for foraging only for this species is very broad, and includes all open scrub vegetation communities (alluvial scrub, arrow weed scrub, big sagebrush scrub, California sagebrush scrub, California sagebrush (*Artemisia californica*), California sagebrush–California buckwheat scrub, and *Eriodictyon* scrub), grasslands (California annual grassland, purple needlegrass, and valley oak/grass), agriculture, and disturbed land. A total of 8,827 acres of suitable foraging habitat only is present in the Project area. The combined suitable nesting and/or foraging habitat in the Project area totals 10,215 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Although there is suitable nesting habitat in the RMDP area (oak woodlands and oak/grass) in the RMDP area, the golden eagle has not been documented to nest within areas subject to disturbance. For the purpose of this analysis, however, it is assumed that the probability of the golden eagle nesting in the RMDP disturbance area is low, but that nesting could occur in suitable habitat. The golden eagle has been observed foraging in the more open/upland habitats beyond the RMDP.

A total of 270 acres of suitable nesting and/or foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.6% of these habitats on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats). Of these impacts, 8.5 acres are nesting and foraging habitat (*i.e.*, habitat suitable for both nesting and foraging, including upland oak woodland and oak/grass), representing 0.6% of this habitat on site. The remaining 262 acres of impact are foraging habitat only (*i.e.*, habitat suitable only for foraging, including scrubs, chaparral, agriculture, and disturbed lands), representing 3.0% of this habitat on site. A total of 105 acres of suitable nesting and/or foraging habitat would be temporarily impacted, of which 1.3 acres are nesting and foraging habitat and 103 acres are foraging habitat only.

Because the golden eagle is still a wide-ranging species and uses a variety of habitats for nesting and foraging, and because the construction of RMDP facilities would be phased over a long period of time, thousands of acres of suitable nesting and foraging habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time. The overall loss of 2.6% of nesting and/or foraging habitat, including the loss of 0.6% of nesting and foraging habitat and 3.0% of foraging habitat only within the RMDP and the direct permanent and temporary loss of habitat that would occur as a result of construction/grading activities associated with the RMDP

therefore would not have a substantial direct adverse effect on this species; interfere substantially with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 4,310 acres of suitable nesting and/or foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 42.2% of these habitats on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats). Of these impacts, 81 acres are nesting and foraging habitat, representing 5.8% of this habitat on site. The remaining 4,229 acres of impact are foraging habitat only, representing 47.9% of this habitat on site.

Golden eagles have been observed within the Project area, and although nesting has not been documented in areas subject to disturbance, suitable nesting habitat exists within the Project area and it is assumed that nesting could occur for the purpose of this analysis. The permanent loss of 42.2% of the suitable nesting and/or foraging habitat, including 5.8% of nesting and foraging habitat and 47.9% of foraging habitat only, as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 4,580 acres (44.8%). Of these impacts, 89 acres are nesting and foraging habitat, representing 6.4% of this habitat on site. The remaining 4,490 acres of impact are foraging habitat only, representing 50.9% of this habitat on site.

The overall loss of 44.8% of nesting and/or foraging habitat, including 6.4% of foraging and nesting habitat and 50.9% of foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because golden eagles are highly mobile, it is extremely unlikely that RMDP-related construction activities would result in mortality of adults and juveniles foraging within the RMDP area. This species has not been documented nesting within the RMDP area subject to disturbance. However, suitable nesting habitat (oak woodlands and oak/grass) is present in the RMDP area, and it is assumed that nesting could occur. If nesting occurred, construction and/or grading activities associated with the proposed RMDP could result in destruction of young or eggs in active nests of this species if such activities occurred during the nesting season. Implementation of the SCP would not directly impact this species. If nests were disturbed, implementation of the RMDP would have a substantial direct adverse effect on this species; interfere substantially with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of suitable nesting habitat for this species; thus, absent mitigation, construction and/or grading activities occurring during the nesting season could inadvertently destroy active nests of this species, resulting in the loss of eggs and/or young.

Although golden eagles are highly mobile, due to the size of the Specific Plan, VCC, and Entrada planning areas, injury to or mortality of individual birds, specifically loss of

young and/or eggs during construction/grading activities as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas, would have a substantial adverse effect on a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary impacts associated with construction include noise, nighttime lighting, and human activity. If construction occurs during the nesting season, these impacts may decrease reproductive success by causing adults to abandon nests.

Long-term development-related impacts include an increased potential for collisions with phone towers, power lines, and utility poles, resulting in physical injury or death as a result of the collision or from electrocution. Reproductive success also could be affected by increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and pet, stray, and feral cats and dogs. Urban development may also increase the potential for fragmentation and would likely restrict any use of habitat within the development area.

Both these short-term and long-term secondary impacts would have a substantial adverse effect on this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and/or foraging habitat for the golden eagle (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 250 acres (2.4%) permanent loss and 147 acres of temporary loss of nesting and/or foraging habitat, including
  - 8.7 acres (0.6%) of permanent loss and 1.3 acres of temporary loss of nesting and foraging habitat
  - 241 acres (2.7%) of permanent loss and 146 acres of temporary loss of foraging habitat only;
- Alternative 4 – 231 acres (1.4%) permanent loss and 154 acres of temporary loss of nesting and/or foraging habitat, including
  - 8.2 acres (0.6%) of permanent loss and 1.3 acres of temporary loss of nesting and foraging habitat
  - 223 acres (2.5%) of permanent loss and 153 acres of temporary loss of foraging habitat only;
- Alternative 5 – 295 acres (2.9%) permanent loss and 133 acres of temporary loss of nesting and/or foraging habitat, including
  - 12 acres (0.9%) of permanent loss and 1.3 acres of temporary loss of nesting and foraging habitat
  - 283 acres (3.2%) of permanent loss and 132 acres of temporary loss of foraging habitat only;
- Alternative 6 – 290 acres (2.8%) permanent loss and 149 acres of temporary loss of nesting and/or foraging habitat, including
  - 18 acres (1.3%) of permanent loss and 1.2 acres of temporary loss of nesting and foraging habitat
  - 272 acres (3.1%) of permanent loss and 148 acres of temporary loss of foraging habitat only; and
- Alternative 7 – 134 acres (1.3%) permanent loss and 484 acres of temporary loss of nesting and/or foraging habitat, including
  - 4.8 acres (0.3%) of permanent loss and 13 acres of temporary loss of nesting and foraging habitat
  - 129 acres (1.5%) of permanent loss and 471 acres of temporary loss of foraging habitat only.

Compared to Alternative 2 for nesting and/or foraging habitat, which would result in 270 acres (2.6%) of permanent loss and 105 acres of temporary impacts, Alternative 3 would have marginally reduced permanent impacts, Alternatives 5 and 6 would have marginally to somewhat increased permanent impacts, and Alternatives 4 and 7 would have

substantially reduced permanent impacts. Alternatives 3 through 6 would have somewhat increased temporary impacts and Alternative 7 would have substantially increased temporary impacts, primarily due to increased temporary impacts along Potrero and Long canyons compared to the other alternatives. For permanent loss of nesting and foraging habitat, compared to Alternative 2, which would have 8.5 acres (0.6%) of permanent impact, Alternatives 3 and 4 impacts would not be substantially different, Alternatives 5 and 6 would have somewhat higher impacts, and Alternative 7 would have somewhat reduced impacts. For temporary impacts to nesting and foraging habitat, compared to Alternative 2, which would result in 1.3 acres of temporary loss, Alternatives 3 through 6 would not have substantially different impacts and Alternative 7 would have substantially higher impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 262 acres (3.0%) of permanent loss, Alternatives 3 and 4 would have somewhat reduced impacts, Alternatives 5 and 6 would have marginally higher impacts, and Alternative 7 would have substantially reduced impacts. For temporary impacts to foraging habitat only, compared to Alternative 2, which would result in 103 acres of temporary loss, Alternatives 3 through 7 would have higher impacts, with Alternatives 3 through 6 resulting in somewhat higher and Alternative 7 resulting in substantially higher impacts.

The relatively greater difference in impacts between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

As noted for Alternative 2, although suitable nesting habitat is present in the RMDP area, the probability that the golden eagle would nest on site is considered to be low, but it could occur. The golden eagle does forage on site in the more open upland habitats beyond the RMDP area. Because the golden eagle is still a wide-ranging species and uses a variety of habitats for nesting and foraging, because the construction of RMDP facilities would be phased over a long period of time, and because thousands of acres of habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available at any given time during construction, the overall permanent loss of nesting and/or foraging habitat (ranging from 1.3% to 2.9%) and temporary impacts within the RMDP area would not have a substantial direct adverse effect on this species; interfere substantially with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the golden eagle (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 4,075 acres (39.9%) permanent loss of nesting and/or foraging habitat, including
  - 62 acres (4.5%) of permanent loss of nesting and foraging habitat
  - 4,013 acres (45.5%) of permanent loss of foraging habitat only;
- Alternative 4 – 3,897 acres (38.2%) permanent loss of nesting and/or foraging habitat, including
  - 61 acres (4.4%) of permanent loss of nesting and foraging habitat
  - 3,836 acres (43.4%) of permanent loss of foraging habitat only;
- Alternative 5 – 3,797 acres (37.2%) permanent loss of nesting and/or foraging habitat, including
  - 62 acres (4.5%) of permanent loss of nesting and foraging habitat
  - 3,735 acres (42.3%) of permanent loss of foraging habitat only;
- Alternative 6 – 3,382 acres (33.1%) permanent loss of nesting and/or foraging habitat, including
  - 40 acres (2.9%) of permanent loss of nesting and foraging habitat
  - 3,342 acres (37.9%) of permanent loss of foraging habitat only; and
- Alternative 7 – 2,879 acres (28.2%) permanent loss of nesting and/or foraging habitat, including
  - 41 acres (3.0%) of permanent loss of nesting and foraging habitat
  - 2,838 acres (33.7%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 4,310 acres (42.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 81 acres (5.8%) of permanent loss of nesting and foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 4,229 acres (47.9%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4

through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat only. These impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species, absent mitigation. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the golden eagle:

- Alternative 3 – 4,324 acres (42.3%) permanent loss of nesting and/or foraging habitat, including
  - 71 acres (5.1%) of permanent loss of nesting and foraging habitat
  - 4,253 acres (48.2%) of permanent loss of foraging habitat only;
- Alternative 4 – 4,128 acres (40.4%) permanent loss of nesting and/or foraging habitat, including
  - 69 acres (5.0%) of permanent loss of nesting and foraging habitat
  - 4,059 acres (46.0%) of permanent loss of foraging habitat only;
- Alternative 5 – 4,092 acres (40.1%) permanent loss of nesting and/or foraging habitat, including
  - 74 acres (5.3%) of permanent loss of nesting and foraging habitat
  - 4,018 acres (45.5%) of permanent loss of foraging habitat only;

- Alternative 6 – 3,672 acres (35.9%) permanent loss of nesting and/or foraging habitat, including
  - 58 acres (4.2%) of permanent loss of nesting and foraging habitat
  - 3,614 acres (40.1%) of permanent loss of foraging habitat only; and
- Alternative 7 – 3,013 acres (29.5%) permanent loss of nesting and/or foraging habitat, including
  - 46 acres (3.3%) of permanent loss of nesting and foraging habitat
  - 2,967 acres (33.6%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 4,580 acres (44.8%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 89 acres (6.4%) of combined direct and indirect permanent loss of nesting and foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for the combined direct and indirect permanent loss of foraging habitat only, which would result in 4,490 acres (50.9%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer combined direct and indirect permanent impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat only. These combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species, absent mitigation. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to golden eagle individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Although nesting has not been documented in the Project area subject to disturbance and the potential for nesting is considered to be low, it is assumed that nesting could occur because suitable nesting habitat is present on site. If nesting occurred, construction/grading activities could result in loss of eggs or young where the golden eagles are nesting, absent mitigation. The loss of or harm to golden eagle individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar short-term construction activities and long-term effects.

Short-term effects include construction-related noise, lighting, and disturbance from human activity that could cause nest abandonment. Urban development could result in long-term secondary impacts, such as increased collisions with phone towers, power lines, and utility poles, resulting in injury or death from the collision or electrocution. A decline in reproductive success could occur due to increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbance of nest sites; and pet, stray, and feral cats and dogs. Habitat fragmentation would likely restrict any use of habitat within the development area.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels, absent mitigation. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to golden eagle: (1) impacts to individuals; (2) loss of suitable nesting and/or foraging habitat; and (3) secondary impacts to individuals and suitable nesting and/or foraging habitat outside the Project footprint.

Although nesting by golden eagles has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, suitable nesting habitat (oak woodlands and oak/grass) is present on site and it is assumed for the purpose of this analysis that nesting could occur. Impacts to individuals could occur if active nests are disturbed during construction, including destruction of nests and loss of eggs and/or fledglings, or abandonment of nests as a result of human activity and noise. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged.

The combined permanent loss of nesting and/or foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 3,013 acres (29.5%) under Alternative 7 to 4,580 acres (44.8%) under Alternative 2. This would be a substantial loss of suitable foraging and/or nesting habitat. Although the golden eagle has not been documented to nest in the Project disturbance area, in the winter of 2008, one juvenile and one pair was seen in upper Potrero Canyon and it is believed that this is likely a resident pair, but no nest site has been identified to date. Therefore, the loss of foraging habitat will alter its foraging behavior on site. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable nesting and/or foraging habitat to support the golden eagle in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 4,068 acres of suitable nesting and/or foraging habitat for the golden eagle in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, any nesting activities by the golden eagle could be adversely affected in the short term by increased human activity and noise if construction occurred during the nesting season. Nighttime lighting may cause adults to abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all grading and construction activities. Long-term development-related impacts include an increased potential for collisions with phone towers, power lines, and utility poles, resulting in physical injury or death as a result of the collision or from electrocution. Reproductive success also could be affected by increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and pet, stray, and feral cats and dogs. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of nesting and/or foraging habitat in the High Country SMA and Salt Creek area will provide golden eagles with relatively undisturbed habitat for foraging and potentially

nesting, especially in the remote portions of the High Country SMA. Lighting restrictions along the perimeter of natural areas would help reduce impacts to potential nest sites. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect golden eagles during foraging activities and potential nest sites. Controls on pesticides (including rodenticides) will reduce the chance of accidental poisoning and potential loss of prey. Installation of new or relocation of existing phone and cell towers, power lines, and utility poles in the High Country SMA and Salt Creek area will be coordinated with CDFG and structures will be designed in accordance with Avian Power Line Interaction Committee (APLIC 2006) guidelines and operated with anti-perching devices to help reduce collisions and electrocutions of golden eagles.

The specific mitigation measures for the golden eagle are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-12 IMPACTS TO INDIVIDUALS – GOLDEN EAGLE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of golden eagle individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce the loss of and harm to golden eagle individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and

grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. In the event that golden eagles establish an active nest in the River Corridor SMA, the buffers will be established in consultation with CDFG.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to golden eagle individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-13 LOSS OF HABITAT – GOLDEN EAGLE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the golden eagle through habitat protection, restoration and enhancement (including oaks), and management in the High Country SMA where the golden eagle is most likely to nest and forage in the Project area.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access and grazing within the High Country SMA. The High Country SMA will protect and manage 2,617 acres of suitable nesting and/or foraging habitat, including 820 acres of suitable nesting and foraging habitat and 1,798 acres of foraging habitat only for the golden eagle.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area. Replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the golden eagle through habitat protection, restoration and enhancement, and management in the Salt Creek area, where the golden eagle may also nest and forage.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of foraging and/or nesting habitat for golden eagle would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-14 SECONDARY IMPACTS – GOLDEN EAGLE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the golden eagle associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as increased human activity, nighttime

lighting, and habitat fragmentation. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-36 through SP-4.6-43 and SP-4.6-48, as described above and which generally refer to habitat protection, restoration and enhancement, and management in the High Country SMA, will be implemented to mitigate for the effects of increased human activity by providing for unfragmented nesting and foraging habitat with limited potential for human disturbance.

Several mitigation measures will control human activities in the High Country SMA. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-34 and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters adjacent to the High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to the golden eagle, including short-term construction-related noise and increased human activity, as well as long-term increased human activity; harassment by pet, stray, and feral cats and dogs; increased secondary poisoning and loss of prey due to the use of pesticides; collisions with phone towers, power lines, and utility poles; and potential electrocutions.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest sites and providing for buffers between nests and construction activities.

BIO-19 through BIO-21, as described above, will mitigate for increased human activity and habitat fragmentation the Project area through habitat protection, restoration and enhancement (if needed), and management in the Salt Creek area.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

In order to mitigate for impacts from the use of pesticides, BIO-64 will be implemented to reduce the chance of secondary poisoning and loss of prey and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides) on site prior to the issuance of building permits.

BIO-81 and BIO-82 will be implemented to mitigate for the impacts from phone towers, power lines, and utility poles as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas.

BIO-81 requires the installation/relocation of phone and cell towers and utility poles in the High Country SMA and Salt Creek area to be coordinated with CDFG. The Project applicant shall install utility poles, phone towers, and cell towers in conformance with APLIC standards for collision-reducing techniques.

BIO-82 specifies anti-perching devices to deter golden eagles and other raptors from perching on all surfaces of new antennae and phone/utility towers. Antennae and towers shall be kept clean of debris, such as cable, trash, and construction materials.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the golden eagle would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

WHITE-TAILED KITE (NESTING) (CFP)

Life History

The white-tailed kite (*Elanus leucurus*) is a California Fully Protected species and occurs in California, Texas, Florida, Oregon Washington, and the middle portions of North America (Eisenmann 1971). It is nonmigratory and populations inhabit the same geographic region year round. Prior to the 1960s, this species occurred in low numbers across much of its range. Population decreases appeared to be common during this time, especially in Mexico and Central America; however, since 1960, the population status and range of this raptor have improved markedly in North America. It has also rapidly colonized habitats throughout much of Central America (Eisenmann 1971).

The white-tailed kite's North American breeding range stronghold is California, where it is a common to uncommon year-long resident in coastal and valley lowlands up to the western Sierra Nevada foothills and southeast deserts (Small 1994; County of Riverside 2008). It is common in the Central Valley of California and along the entire length of the coast. In the Sacramento Valley in California, kite populations have predominantly increased in irrigated agricultural areas where the California vole (*Microtus californicus*) often occurs (Warner and Rudd 1975). Breeding has also been documented regularly in the far western counties of Oregon and recently in southwest Washington. It is also a common breeder in southern Texas. A small breeding population has been established in southern Florida since at least 1986, with scattered reports elsewhere in the peninsula and in the eastern panhandle (County of Riverside 2008). Its breeding range continues south along the coast of Mexico into Central America and in South America from Colombia south to Buenos Aires (County of Riverside 2008). Although it is generally a resident bird throughout most of its breeding range, some dispersal occurs during the non-breeding season, resulting in some range expansion during the fall and winter. Because white-tailed kite populations often change in direct response to changing vole and rodent populations, it is believed to be nomadic during low-abundance population cycles of California voles and other prey (Dunk and Cooper 1994).

The white-tailed kite is commonly associated with agriculture areas (Grinnell and Miller 1944), but it also inhabits low-elevation grasslands, savannah-like habitats, open sage scrub, meadows, wetlands, and oak woodlands, particularly in areas with a dense population of voles (Waian and Stendell 1970). Riparian areas adjacent to open space areas are typically used for nesting (County of Riverside 2008), where kites prefer dense, broad-leafed deciduous trees for nesting and roosting (Brown and Amadon 1968). Overall vegetation structure and prey abundance are apparently more important than the specific plant associations (County of Riverside 2008). Nest trees may be isolated or in an intact forested area and can include a variety of tree species, such as willow, oak, or other species from three to 50 meters (10 to 164 feet) in height (Dixon *et al.* 1957). Nests are generally not reused in subsequent breeding seasons, although some reuse has

been reported (County of Riverside 2008). Nest sites are closely associated with suitable foraging habitat with high rodent populations in the immediate vicinity of the nest. Erichsen *et al.* (1996) described how successful nests are more often than not surrounded by preferred foraging habitat (particularly agriculture) within a 0.5-mile radius of the nest. Hawbecker (1942) noted that during the breeding season, kites seldom forage farther than a 0.5-mile radius from the nest site; Faanes and Howard (1987) noted that within the 0.5-mile radius, there must be at least 50 acres of suitable foraging habitat to support a breeding pair of kites.

Winter habitat is not substantially different than breeding habitat but the proximity to trees is not as important. The white-tailed kite is known to communally roost in the fall and winter, generally in small stands of trees, but roosts have also been observed in open fields on the ground and in orchards (County of Riverside 2008).

White-tailed kites exhibit year-round diurnal (daytime) and crepuscular (dawn and dusk) activity (Zeiner *et al.* 1990A). They prey mostly on small mammals, with voles and other small rodents making up approximately 95% of their diet, but they occasionally take birds, insects, reptiles, and amphibians. White-tailed kites forage in undisturbed, open grasslands, meadows, farmlands, emergent wetlands, ungrazed grasslands, fence rows, and irrigation ditches adjacent to grazed lands, open shrub and scrub, and open woodlands (County of Riverside 2008).

The white-tailed kite breeds from February to October, with a peak from May to August. Clutches average four or five eggs, with a range from three to six eggs. Incubation lasts about 28 days and young fledge in 35 to 40 days.

The California population of the white-tailed kite was historically reduced by habitat loss, shooting, and possibly egg collecting, and by the 1930s, the species bordered on extinction (Pickwell 1930). Recent population declines may be related to reductions in the prey base due to the conversion of natural or agricultural lands to urban or commercial land uses. In addition, overgrazing and "clean farming" techniques that leave little residual vegetation may also have resulted in prey base declines. Fragmentation and isolation of foraging habitat from nest sites as a result of urban development decreases the potential for nesting success because nesting white-tailed kites have to expend more energy obtaining food if foraging habitat is beyond the typical 0.5-mile radius from the nest (Erichsen *et al.* 1996; Faanes and Howard 1987). Other potential human-related impacts include nest disturbance and predation by species such as crows, raccoons, and opossums (Zeiner *et al.* 1990A); increased human activity, which may disturb nesting behavior; pesticides, which reduce prey and may cause secondary poisoning; harassment and predation by pet, stray, and feral cats and dogs; and increased incidence of collisions with vehicles and man-made structures.

Survey Results

Bird surveys have been conducted in the riparian areas of the Santa Clara River and Castaic Creek from 1988 through 2007 (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C; Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); in Castaic Creek, Salt Creek area, High Country SMA, and portions of the Santa Clara River corridor adjacent to the Project site in 2005 and 2006 (Dudek and Associates 2006B, 2006D, 2006E); and in Castaic Creek and the Santa Clara River corridor from the I-5 bridge to Las Brisas Bridge west of the Ventura County line in 2007 (Bloom Biological 2007A, 2008). Although most of these surveys were focused on neotropical migrants, such as least Bell's vireo and southwestern willow flycatcher, surveys in 2007 and 2008 also focused on wintering and breeding raptor species within and adjacent to the Santa Clara River corridor (Bloom Biological 2007A, 2008, 2009).

During these surveys, the white-tailed kite has been observed primarily along the Santa Clara River, where it nests in associated riparian woodlands and forages in adjacent grasslands, open sage scrub, and agricultural fields (**Figure 4.5-78**, RMDP/SCP White-Tailed Kite Occurrences). Eight nesting pairs were documented in the Santa Clara River corridor from The Old Road Bridge to the Castaic Creek confluence and three nesting pairs were documented in Castaic Creek between the years of 1993 and 2005 (Guthrie 2005C). In 2007, at least 10 pairs were observed along the Santa Clara River within the Specific Plan and VCC planning areas and adjacent to the Project area in Castaic Junction and near the Ventura County line (Bloom Biological 2007A). Active nests for four of these pairs were observed during the 2007 surveys: one was observed along the Santa Clara River within the RMDP south of Chiquito Canyon and three were observed just outside the Project area (two north and northeast of Magic Mountain Park and one just west of the Ventura County line). In addition, a roost of up to eight individuals was observed in lower Castaic Creek within the Specific Plan area (Bloom Biological 2007A). In 2008, at least two individuals were observed periodically along the Santa Clara River: one upstream of the Las Brisas Bridge and one just west of the Ventura County line; another was observed on one occasion in an agriculture field near the Magic Mountain Park parking lot (Bloom Biological 2009). Bloom Biological (2009) noted that white-tailed kites occurred less frequently in the 2008 winter surveys than the 2007 surveys (2007A), and that no roosts were located during the 2008 surveys.

For the purpose of this analysis, it is assumed that the white-tailed kite could nest anywhere in suitable nesting habitat because nests generally are not reused in subsequent breeding seasons (County of Riverside 2008). Suitable nesting habitat includes southern cottonwood–willow riparian, southern coast live oak riparian forest, southern willow scrub, coast live oak woodland,

mixed oak woodland, valley oak woodland, and valley oak/grass. A total of 1,913 acres of suitable nesting habitat is present in the Project area.

Also for the purpose of this analysis, suitable foraging habitat is defined as agriculture, California annual grassland, purple needlegrass, and scrub habitats (alluvial scrub, arrow weed scrub, mulefat scrub, big sagebrush scrub, California sagebrush scrub and associations, California sagebrush–black sage, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral, big sagebrush–California buckwheat, and coyote brush scrub) that occur within 0.5 mile of the edge of suitable nesting habitat. The 0.5-mile radius is based on the observation noted above that kites seldom forage farther than a 0.5-mile radius from an active nest site (Hawbecker 1942). A total of 7,702 acres of suitable foraging habitat within 0.5 mile of suitable nesting habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 253 acres of suitable nesting and foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.6% of these habitats on site (**Figure 4.5-79**, Alternative 2 Impacts to White-Tailed Kite Foraging and Nesting Habitat). Of these impacts, 48 acres are nesting habitat, representing 2.5% of this habitat on site. The remaining 205 acres of impact are foraging habitat, representing 2.7% of this habitat on site. A total of 141 acres of suitable habitat would be temporarily impacted, including 46 acres of nesting habitat and 95 acres of foraging habitat.

Although a relatively small percentage of habitat on site would be permanently lost, nesting habitat for an uncommon special-status species would be lost. Raptors in general are uncommon and receive special protection by CDFG. This impact would have the potential to substantially reduce the habitat of the species on site or rangewide; substantially interfere with the movement of the species or impede the use of a nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten

to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,453 acres of suitable nesting and foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 35.9% of these habitats on site (**Figure 4.5-79**, Alternative 2 Impacts to White-Tailed Kite Foraging and Nesting Habitat). Of these impacts, 93 acres are nesting habitat, representing 4.9% of this habitat on site. The remaining 3,360 acres of impact are foraging habitat, representing 43.6% of this habitat on site.

Both nesting and a relatively large amount and percentage of on-site foraging habitat for the white-tailed kite would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site primarily by eliminating it from foraging in approximately 44.0% of suitable habitat, thus potentially reducing its numbers and restricting its range on site (significance criteria 1 and 7), absent mitigation. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,706 acres (38.5%). Of these impacts, 141 acres are to nesting habitat, representing 7.4% of this habitat on site. The remaining 3,565 acres of impact are to foraging habitat, representing 46.3% of this habitat on site.

The combined direct and indirect impacts would result in a relatively large amount and percentage of permanent loss of on-site foraging habitat for the white-tailed kite, as well as a substantial amount of loss of nesting habitat, as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from nesting and foraging in 38.5% of suitable habitat, thus potentially reducing its numbers and restricting its range on site (significance criteria 1 and 7), absent mitigation. The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The white-tailed kite nests observed during the various avian surveys conducted within the Project area occurred within the riparian habitats along the Santa Clara River, including nesting in proximity to proposed RMDP facility construction areas. White-tailed kites are expected to forage most frequently in suitable habitat within at least 0.5 mile of active nests. Because white-tailed kites are highly mobile, it is unlikely that RMDP-related construction/grading activities would result in direct injury or mortality of adult birds. However, absent mitigation, construction and/or grading activities associated with the proposed RMDP could adversely affect foraging and nesting kites. Foraging individuals may avoid construction areas, and if construction occurred during the breeding season, active nests could be disturbed or destroyed, and eggs and/or young could be destroyed, injured, or killed. Impacts on foraging behavior by adults during the rearing period could also affect the health of young and survivorship, potentially resulting in reduced reproductive success. In addition, construction activities could cause females to abandon nests, resulting in the loss of the nest due to predators or exposure. These would be significant impacts (significance criteria 1 and 7), absent mitigation. Implementation of the SCP would not directly impact this species.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals. Because the species nests and forages on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could adversely affect nesting kites. This would be a significant impact (significance criteria 1 and 7), absent mitigation.

Secondary Impacts

Short-term, construction-related impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could potentially affect white-tailed kites nesting or foraging in areas adjacent to construction zones. These impacts include construction-related fugitive dust, nesting and foraging disturbance from increased human activity, noise and ground vibration, and nighttime illumination, which could modify essential behaviors of individuals, increase physiological stress, potentially increase their risk of predation, and potentially cause nest abandonment.

Potential long-term secondary effects resulting from RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas adjacent to nesting and foraging habitat include nighttime lighting; increased human activity; increased noise; harassment and predation by pet,

feral, and stray cats and dogs and other mesopredators (particularly raccoons and opossums); the use of pesticides, which could result in the loss of prey and secondary poisoning; and increased incidence of collisions with vehicles and man-made structures.

Both short-term and long-term secondary impacts would have a substantial adverse effect on this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7), absent mitigation. Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for white-tailed kite (**Figures 4.5-80** through **4.5-84**, Alternatives 3 through 7 Impacts to White-Tailed Kite Foraging and Nesting Habitat):

- Alternative 3 – 218 acres (2.3%) permanent loss and 177 acres of temporary loss of suitable habitat, including
  - 35 acres (1.8%) of permanent loss and 45 acres of temporary loss of nesting habitat
  - 183 acres (2.4%) of permanent loss and 132 acres of temporary loss of foraging habitat;
- Alternative 4 – 209 acres (2.2%) permanent loss and 180 acres of temporary loss of suitable habitat, including
  - 35 acres (1.8%) of permanent loss and 43 acres of temporary loss of nesting habitat
  - 174 acres (2.3%) of permanent loss and 137 acres of temporary loss of foraging habitat;
- Alternative 5 – 257 acres (2.7%) permanent loss and 172 acres of temporary loss of suitable habitat, including
  - 44 acres (2.3%) of permanent loss and 48 acres of temporary loss of nesting habitat

  - 213 acres (2.8%) of permanent loss and 124 acres of temporary loss of foraging habitat;
- Alternative 6 – 246 acres (2.6%) permanent loss and 177 acres of temporary loss of suitable habitat, including
  - 36 acres (1.9%) of permanent loss and 44 acres of temporary loss of nesting habitat
  - 210 acres (2.7%) of permanent loss and 133 acres of temporary loss of foraging habitat; and
- Alternative 7 – 103 acres (1.1%) permanent loss and 431 acres of temporary loss of suitable habitat, including
  - 14 acres (0.7%) of permanent loss and 37 acres of temporary loss of nesting habitat
  - 89 acres (1.2%) of permanent loss and 394 acres of temporary loss of foraging habitat.

Compared to Alternative 2 for the combined suitable nesting and foraging habitat, which would result in 253 acres (2.6%) of permanent loss and 141 acres of temporary impacts, Alternatives 3 and 4 would have somewhat reduced permanent impacts, Alternative 5 would have marginally increased permanent impacts, Alternative 6 would have marginally reduced permanent impacts, and Alternative 7 would have substantially reduced permanent impacts. For temporary impacts, Alternatives 3 through 6 would have somewhat increased impacts compared to Alternative 2 and Alternative 7 would have substantially increased impacts.

For nesting habitat alone, compared to Alternative 2, which would result in 48 acres (2.5%) of permanent loss and 46 acres of temporary impacts, Alternatives 3 through 6 would have somewhat reduced permanent impacts, and Alternative 7 would have substantially reduced impacts due to the pullback of the Project footprint from the Santa Clara River and its tributaries. For temporary impacts, Alternatives 3 through 6 would not have substantially different impacts and Alternative 7 would have somewhat reduced impacts compared to Alternative 2.

For foraging habitat alone, compared to Alternative 2, which would result in 205 acres (2.7%) of permanent loss and 95 acres of temporary impacts, Alternatives 3 and 4 would have somewhat reduced permanent impacts, Alternatives 5 and 6 would have marginally increased permanent impacts, and Alternative 7 would have substantially reduced permanent impacts. Compared to Alternative 2 for temporary impacts to foraging habitat, Alternatives 3 through 6 would have somewhat increased impacts compared to Alternative 2, and Alternative 7 would have substantially increased impacts.

The overall permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2. Although a relatively small percentage of habitat would be permanently lost, nesting habitat for an uncommon special-status species would be lost under all of the alternatives. Absent mitigation, this impact would be considered a substantial adverse effect on the habitat of this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would potentially reduce the number or restrict the range of the species. The direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for white-tailed kite (**Figures 4.5-80** through **4.5-84**, Alternatives 3 through 7 Impacts to White-Tailed Kite Foraging and Nesting Habitat):

- Alternative 3 – 3,280 acres (34.1%) permanent loss of suitable habitat, including
  - 73 acres (3.8%) of permanent loss of nesting habitat
  - 3,207 acres (41.6%) of permanent loss of foraging habitat;
- Alternative 4 – 3,157 acres (32.8%) permanent loss of suitable habitat, including
  - 68 acres (3.5%) of permanent loss of nesting habitat
  - 3,089 acres (40.1%) of permanent loss of foraging habitat;
- Alternative 5 – 3,083 acres (32.1%) permanent loss of suitable habitat, including
  - 69 acres (3.6%) of permanent loss of nesting habitat
  - 3,014 acres (39.1%) of permanent loss of foraging habitat;
- Alternative 6 – 2,734 acres (28.4%) permanent loss of suitable habitat, including
  - 42 acres (2.2%) of permanent loss of nesting habitat
  - 2,692 acres (35.0%) of permanent loss of foraging habitat; and
- Alternative 7 – 2,363 acres (24.6%) permanent loss of suitable habitat, including
  - 45 acres (2.4%) of permanent loss of nesting habitat
  - 2,318 acres (30.1%) of permanent loss of foraging habitat.

Compared to Alternative 2 for combined suitable nesting and foraging habitat, which would result in 3,453 acres (35.9%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting habitat. Compared to Alternative 2, which would result in 93 acres (4.9%) of permanent loss of nesting habitat, Alternatives 3 through 7 would have reduced impacts. Similarly, compared to Alternative 2 for foraging habitat, which would result in 3,360 acres (43.6%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for suitable habitat, Alternatives 4 through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in impacts to nesting habitat and substantial impacts to foraging habitat. Absent mitigation, these impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would potentially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for white-tailed kite:

- Alternative 3 – 3,498 acres (36.4%) permanent loss of suitable habitat, including
  - 108 acres (5.6%) of permanent loss of nesting habitat
  - 3,390 acres (44.0%) of permanent loss of foraging habitat;
- Alternative 4 – 3,366 acres (35.0%) permanent loss of suitable habitat, including
  - 103 acres (5.3%) of permanent loss of nesting habitat
  - 3,263 acres (42.4%) of permanent loss of foraging habitat;

- Alternative 5 – 3,340 acres (34.7%) permanent loss of suitable habitat, including
  - 113 acres (5.8%) of permanent loss of nesting habitat
  - 3,227 acres (41.9%) of permanent loss of foraging habitat;
- Alternative 6 – 2,980 acres (31.0%) permanent loss of suitable habitat, including
  - 78 acres (4.1%) of permanent loss of nesting habitat
  - 2,902 acres (37.7%) of permanent loss of foraging habitat; and
- Alternative 7 – 2,466 acres (25.6%) permanent loss of suitable habitat, including
  - 59 acres (3.1%) of permanent loss of nesting habitat
  - 2,407 acres (31.3%) of permanent loss of foraging habitat.

Compared to Alternative 2 for suitable nesting and foraging habitat, which would result in 3,706 acres (38.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting habitat. Compared to Alternative 2, which would result in 141 acres (7.4%) of permanent loss of nesting habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for the combined direct and indirect permanent loss of foraging habitat, which would result in 3,565 acres (46.3%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for suitable habitat, Alternatives 4 through 7 would have fewer combined impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in impacts to nesting habitat and substantial impacts to foraging habitat. Absent mitigation, these combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would potentially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to white-tailed kite individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Suitable nesting and foraging habitat is present on site and, absent mitigation, construction/grading activities could result in disruption of foraging activities and destruction of nests and eggs and/or injury or mortality of young where white-tailed kites are nesting. Impacts to white-tailed kite individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Short-term effects include construction-related noise, ground vibration, lighting, and disturbance from human activity that could disrupt foraging behavior and natal care and cause nest abandonment. Urban development could result in long-term secondary impacts, such as increased human activity; noise; nighttime lighting; harassment by pet, stray, and feral cats and dogs; secondary poisoning and loss of prey from use of pesticides; and increased incidence of collisions with vehicles and manmade structures.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species, absent mitigation. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to the white-tailed kite: (1) impacts to individuals; (2) loss of suitable foraging and nesting habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting and foraging by this species has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. For example, nest sites have been documented in close proximity to the proposed Potrero Canyon and Long Canyon bridges.

While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if vegetation clearing and construction/grading activities occur during the breeding season, potentially resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also alter foraging behavior, reducing the health and survivorship of young, or cause abandonment of nests due to human activity, noise, and ground vibration. Lighting could alter nesting behavior, induce physiological stress, or increase predation risk by nocturnal mesopredators. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable nesting and foraging habitat for the white-tailed kite resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,466 acres (25.6%) under Alternative 7 to 3,706 acres (38.5%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for foraging, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the white-tailed kite in the Project vicinity. In order to provide additional nesting, roosting, and foraging habitat for white-tailed kite, oak woodland restoration will be implemented. This restoration will provide better understory habitat than currently exists for rodent prey in areas that are currently grazed by cattle. Implementation of these mitigation measures will result in protection and management of at least 4,421 acres of the suitable habitat for this species, including 1,546 acres of nesting habitat and 2,875 acres of foraging habitat (*i.e.,* foraging habitat within 0.5 mile of suitable nesting habitat) in the River Corridor SMA, High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging and nesting activities by the white-tailed kite could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators and exposure. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys within 500 feet of disturbance zones and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include increased noise; lighting; increased human activity; pesticides, which may cause direct and secondary poisoning and loss of prey; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and increased collisions with vehicles and man-made structures. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and

management of 4,421 acres of suitable nesting and foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide white-tailed kites with relatively undisturbed habitat for foraging and nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect white-tailed kites by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning, and loss of prey. Provision of a large, relatively undisturbed open space system providing nesting and foraging habitat away from development areas will also help mitigate for increased collisions with vehicles and man-made structures.

The specific mitigation measures for the white-tailed kite are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-15 IMPACTS TO INDIVIDUALS – WHITE-TAILED KITE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of white-tailed kite individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to white-tailed kite individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading

plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to white-tailed kite individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-16 LOSS OF HABITAT – WHITE-TAILED KITE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for white-tailed kite through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 383 acres of suitable habitat for white-tailed kite, including 293 acres of nesting habitat and 90 acres of foraging habitat**.** The High Country SMA will preserve and enhance 2,719 acres of suitable habitat for white-tailed kite, including 871 acres of nesting habitat and 1,848 acres of foraging habitat.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for white-tailed kite through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area supports 1,319 acres of suitable habitat for the white-tailed kite, including 382 acres of nesting habitat and 937 acres of foraging habitat.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-22 states that the Oak Resources Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat shall be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the white-tailed kite would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-17 SECONDARY IMPACTS – WHITE-TAILED KITE

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on white-tailed kite associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as increased human activity and nighttime lighting. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat

protection, restoration and enhancement, and management, will be implemented to mitigate for the effects of increased human activity. This open space area will also help mitigate for increased incidence of collisions with vehicles and man-made buildings by providing a large undisturbed area to support nesting and foraging.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to white-tailed kite, including short-term construction-related dust, noise, ground vibration, and increased human activity, as well as long-term effects such as increased human activity; harassment by pet, stray, and feral cats and dogs; secondary poisoning and loss of prey due to the use of pesticides; and increased incidence of collisions with vehicles and man-made structures.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest sites and providing for buffers between nests and construction activities.

BIO-1 through BIO-16 and BIO-19 through BIO-22, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to reduce impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to reduce the chance of poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to white-tailed kite would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

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LEAST BELL'S VIREO (NESTING) (FE, CE)

Life History

The least Bell's vireo (*Vireo bellii pusillus*) is one of four subspecies of the Bell's vireo; its breeding range includes coastal and inland southern California (including the western edge of southern California's southern deserts), a small area within California's Central Valley, and extreme northern Baja California, Mexico. Although the winter range of full species Bell's vireo is not well known, it generally appears to winter from southern Baja and southern Sonora south along the west coast of Mexico and Central America to Honduras and casually to northern Nicaragua. It is also reported from the eastern coast of Central America from Veracruz south to Honduras (County of Riverside 2008). The subspecies least Bell's vireo does not winter in the Project area.

The least Bell's vireo formerly was a common and widespread summer resident below approximately 600 meters (2,000 feet) AMSL elevation in the western Sierra Nevada, throughout the Sacramento and San Joaquin valleys, and in the coastal valleys and foothills from Santa Clara County south (Zeiner *et al.* 1990A). Least Bell's vireo also was common in coastal southern California from Santa Barbara County south, east of the Sierra Nevada below approximately 1,200 meters (4,000 feet) AMSL, in the Owens and Benton valleys, along the Mojave River and other streams at the western edge of southeastern deserts, and along the entire length of the Colorado River (Grinnell and Miller 1944).

The USFWS (2006) conducted a five-year status review of the least Bell's vireo that compiled comprehensive survey data for five-year increments from 1977 to 2005.[1] As shown in **Table 4.5-55**, the least Bell's vireo breeding population in the United States has increased about tenfold since its federal listing as endangered in 1986, from approximately 291 to approximately 2,968 known territories (51 FR 16474–16482; USFWS 2006). The breeding population has grown during each five-year period since the original federal listing, although the rate of increase has slowed over the last 10 years. Population growth in terms of percentages and numbers has been greatest in San Diego and Riverside counties, with lesser but still significant increases in Orange, Ventura, San Bernardino, and Los Angeles counties (USFWS 2006). Only Santa Barbara County appears to have experienced a significant decline in territories, dropping from a high of 57 territories in 1986–1990 to only 12 in the 1996–2000 and 2001–2005 time periods. The Santa Clara River supports 90% or more of the Ventura County population, which has increased from five to 117 territories during the period of study.

[1] These data represent a minimum estimate of least Bell's vireo territories because they are a composite of multiple surveys covering different reaches and may exclude large stretches of suitable habitat that were not surveyed (USFWS 2006); in other words, these data do not represent a single snapshot of the entire occupied vireo range.

Table 4.5-55
Estimate of Least Bell's Vireo Territories by County[1]

Estimate of Least Bell's Vireo Territories (and Percentage of the Total Population) for a Given Range of Years[2]					
County	**1977–1985[3]**	**1986–1990**	**1991–1995**	**1996–2000**	**2001–2005**
San Diego[4]	223 (77%)	401 (76%)	1,118 (78%)	1,899 (76%)	1,609 (54%)
Riverside[5]	29 (10%)	50 (9%)	223 (16%)	395 (16%)	898 (30%)
Orange	1 (<1%)	3 (1%)	16 (1%)	68 (3%)	177 (6%)
San Bernardino	0 (0%)	2 (<1%)	5 (<1%)	20 (1%)	87 (3%)
Los Angeles	6 (2%)	1 (<1%)	4 (<1%)	13 (1%)	56 (2%)
Ventura[6]	5 (2%)	8 (2%)	35 (2%)	86 (3%)	117 (4%)
Santa Barbara[7]	26 (9%)	57 (11%)	32 (2%)	12 (<1%)	12 (<1%)
Inyo	0 (0%)	4 (1%)	5 (<1%)	0 (0%)	11 (<1%)
Kern	0 (0%)	0 (0%)	1 (<1%)	0 (0%)	0 (0%)
Monterey	0 (0%)	3 (1%)	0 (0%)	0 (0%)	0 (0%)
San Benito	1 (<1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Stanislaus	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (<1%)
Total	***291***	***529***	***1,439***	***2,493***	***2,968***
Percent Increase from Previous Period	—	*82%*	*172%*	*73%*	*20%*
Percent Increase since Listing	—	*82%*	*394%*	*753%*	*920%*

[1] Reproduced from USFWS (2006).
[2] Estimates based on composite of surveys across the specified range of years.
[3] From the original listing (51 FR 16474).
[4] Approximately 50% or greater from Camp Pendleton.
[5] Approximately 90% or greater from the Santa Ana River and its tributaries.
[6] Approximately 90% or greater from the Santa Clara River.
[7] Approximately 90% or greater from the Santa Ynez River.

The USFWS published a Draft Recovery Plan for the least Bell's vireo in 1998 (USFWS 1998B). **Table 4.5-56** shows the distribution of least Bell's vireo territories among the 11 population units identified in the Draft Recovery Plan and the population trend since the original federal listing in 1986 and for the 2001 to 2005 time period versus the 1996 to 2000 time period. The two largest concentrations of least Bell's vireo territories are in the Santa Ana River (including Prado Basin) and on Camp Pendleton/Santa Margarita River. San Diego County, including Camp Pendleton, has the greatest total number of confirmed territories, with the largest concentrations in the Santa Margarita River, San Luis Rey River, Tijuana River, and Anza-Borrego Desert State Park. The Santa Clara River in Los Angeles and Ventura counties also supports a large concentration of territories, with 119 territories in 2001.

Table 4.5-56
Most Recent Comprehensive Estimates of Least Bell's Vireos at 11 Population Units[1,2]

Location	County	Year[3]	Vireo Territories[4]	Population Trend[5]
Tijuana River	San Diego	2004–2005	150	+/–
Dulzura Creek/Jamul Creek/Otay River[6]	San Diego	2001–2005	36	+/I
Sweetwater River	San Diego	2001	103	+/+
San Diego River	San Diego	1997	66	+/I
San Luis Rey River[7]	San Diego	2000	233	+/I
Camp Pendleton/Santa Margarita River[8]	San Diego	2005	827	+/–
Santa Ana River[9]	Orange, Riverside, San Bernardino	2005	813	+/+
Orange and Los Angeles counties[10]	Orange, Los Angeles	2001–2005	180	+/+
Santa Clara River	Los Angeles, Ventura	2001	119	+/+
Santa Ynez River	Santa Barbara	2001	11	–/–
Anza-Borrego Desert State Park	San Diego	2002	117	+/+

[1] Reproduced from USFWS (2006).
[2] As designated in the Draft Recovery Plan (USFWS 1998B).
[3] Year(s) of most recent extensive surveys. Composite of surveys across multiple years were used where within-year surveys were not considered adequately comprehensive.
[4] Minimum estimate; generally a composite of multiple survey efforts covering different reaches; may exclude large stretches of non-surveyed habitat. All estimates are based on survey reports submitted to the USFWS Carlsbad Field Office or values obtained from the U.S. Geological Survey (USGS) database (USGS 2006).
[5] Overall trend since original listing/trend comparing 1996–2000 to 2001–2005. "+" = Increasing, "–" = Declining, "I" = Inadequate data to evaluate.
[6] Primarily derived from Otay River surveys. No comprehensive surveys of Dulzura and Jamul creeks since 1996 were available.
[7] Mainstem only; excludes Pilgrim Creek.
[8] Includes all willow riparian habitat on Marine Corps Base (MCB) Camp Pendleton; excludes portions of Santa Margarita River off of MCB Camp Pendleton.
[9] Mainstem and Prado Basin study area only; excludes San Timoteo Creek, Temescal Wash, and other tributaries.
[10] Excluding Santa Ana River and Santa Clara River mainstems.

Least Bell's vireos primarily occupy riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within one to two meters (3.3 to 6.6 feet) of the ground, often adjacent to a complex, stratified canopy. Least Bell's vireo nesting habitats in cismontane and coastal areas include southern willow scrub, mulefat scrub, arroyo willow riparian forest edge, wild blackberry thickets, and, more rarely, cottonwood forest, sycamore alluvial woodland, and southern coast live oak riparian forest. Along riparian corridors at desert locations, young willows are favored and, where absent, mesquite (*Prosopsis* spp.) and desert apricot (*Prunus fremontii*) are typically used. In interior regions, least Bell's vireo habitat is usually limited to the immediate vicinity of watercourses below approximately

457 meters (1,500 feet) AMSL (51 FR 16474–16482; Small 1994). In the coastal portions of its southern California range, the least Bell's vireo occurs in lower portions of canyons, typically below 600 meters (2,000 feet) AMSL.

Least Bell's vireos generally begin to arrive from their wintering range in southern Baja California, and possibly mainland Mexico, to establish breeding territories by mid- to late March (Garrett and Dunn 1981; Salata 1983A, 1983B; Hays 1989; Pike and Hays 1992). Nests are typically built within approximately 1 meter (3.3 feet) of the ground in the forks of willows, wild rose, mulefat, or other understory vegetation (Franzreb 1989). Cover surrounding nests is moderately open mid-story with an overstory of willow, cottonwood, sycamore, or oak. Crown cover is usually more than 50% and contains occasional small openings. The most critical structural component to least Bell's vireo breeding habitat is a dense shrub layer at 0.6 to 3 meters (2 to 10 feet) above the ground (Goldwasser 1981; Franzreb 1989). Breeding territories, which are maintained by males and include threats and physical confrontations, range on average from 1 to 3 acres (USFWS 1998B).

Clutch sizes of the least Bell's vireo are between two to five eggs (typically three or four) that are laid shortly after nest construction (Salata 1984; Kus 1994; USFWS 1998B). Incubation is about 14 days, and young fledge about 12 to 14 days after hatching (Zeiner *et al.* 1990A). Fledglings may wander from established breeding territories but remain under parental care for several more weeks (USFWS 1998B). Least Bell's vireos usually produce only one brood per season but attempts of up to four or five additional broods have also been reported (Franzreb 1989; USFWS 1998B).

A large majority of the breeding least Bell's vireos typically depart their breeding grounds by the third week of September, and only a few least Bell's vireos are found wintering in California or the United States as a whole (Barlow 1962; Nolan 1960; Erlich *et al.* 1988; Garrett and Dunn 1981; Salata 1983A, 1983B; Pike and Hays 1992).

During the spring and fall migrations, the Bell's vireo occupies a wider range of habitats, including coastal scrub, riparian, and woodland habitats. The winter range of habitats of the Bell's vireo includes thornscrub vegetation adjacent to watercourses or in riparian gallery forests along the west coast of northern and central Mexico. In southern Mexico and Honduras, tropical deciduous forest and arid tropical scrub along the coast is used as habitat (County of Riverside 2008).

Bell's vireos are known to feed primarily on insects and spiders (Chapin 1925; Bent 1950; Terres 1980). The least Bell's vireo primarily forages in riparian strands of young (*i.e.*, early succession) willows and willow scrub associations of similar structure (*e.g.*, southern willow scrub, mulefat scrub, arrow weed scrub) and may forage in upland vegetation that is adjacent to the riparian vegetation, including chaparral, sage scrub, and oak woodlands later in the breeding season (Gray and Greaves 1984; Salata 1983B; Kus and Miner 1989). Least Bell's vireos forage

in a variety of tree and shrub species and have a preference for black willow, arroyo willow, and mulefat. Individuals are known to travel between three and 61 meters (10 and 200 feet), with a mean travel distance of approximately 15.5 meters (50.8 feet) while foraging, with the majority of these destinations occurring within 30 meters (98 feet) of the edge of riparian vegetation (Kus and Miner 1989). Least Bell's vireo are known to forage in all vertical vegetation layers from ground level to 20 meters (66 feet), but most feeding is concentrated above the ground surface in the lower vegetation layers from ground level to six meters (20 feet) (Kus and Miner 1989; Salata 1983B).

Critical Habitat

The USFWS made a final critical habitat designation for the least Bell's vireo on February 2, 1994 (59 FR 4845). The USFWS vireo critical habitat designation covers approximately 38,000 acres at 10 different locations in six counties in southern California: Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego.

Newhall Land property includes a portion of the Santa Clara River critical habitat unit located in Ventura and Los Angeles counties (**Figure 4.5-85**, Least Bell's Vireo Critical Habitat in Santa Clara River Critical Habitat Unit). The Santa Clara River unit includes all land within a 3,500-foot-wide zone along the Santa Clara River south of State Route 126 (SR-126) from a point approximately 2.3 miles east of the intersection of Main Street and SR-126 in Piru on the west to the intersection of SR-126 and The Old Road and eastward and southward along The Old Road to its intersection with Rye Canyon Road.

The Santa Clara River critical habitat unit comprises approximately 4,410 acres (approximately 12%) of the total 38,000 acres of least Bell's vireo critical habitat. The Newhall Land portion of the critical habitat unit comprises approximately 4,213 acres: about 95% of the Santa Clara River critical habitat unit and 11% of the total least Bell's vireo critical habitat. Of this, the RMDP Project area within least Bell's vireo critical habitat totals 2,252 acres (**Figure 4.5-85**).

The USFWS described the primary constituent elements for least Bell's vireo critical habitat as follows (59 FR 4846):

> [Biological features that] support feeding, nesting, roosting and sheltering are essential to the conservation of the least Bell's vireo. These habitat features can be described as riparian woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats. Vireos meet their survival and reproductive needs (food, cover, nest sites, nestling and fledgling protection) within the riparian zone in most areas. In some areas they also forage in adjacent upland habitats.

Because primary constituent elements may be distributed unevenly throughout a given landscape, critical habitat designations often include areas that have no primary constituent elements for the relevant species. As the USFWS acknowledges, critical habitat designations often use "existing, readily recognizable boundaries" to outline critical habitat areas, and this approach may result in the inclusion of lands that do not contain the primary constituent elements (59 FR 4850). In the case of the least Bell's vireo, the designation specifically states (59 FR 4850):

> In cases where areas designated as critical habitat do not contain the primary constituent elements, impacts occurring within this area will not result in a finding of adverse modification by the [USFWS]. Thus, designation of critical habitat will not affect those areas within the legal critical habitat boundaries that do not contain vireo nesting or foraging habitat.

For the purpose of this analysis, primary constituent elements are defined as southern willow scrub, southern cottonwood–willow riparian, arrow weed scrub, mule fat scrub, and Mexican elderberry scrub and woodland that provide the nesting/foraging habitat for the least Bell's vireo, and native shrub habitats (big sagebrush scrub, alluvial scrub, California sagebrush scrub, chaparral, and coyote brush scrub) and woodland habitats (coast live oak, valley oak) within 100 feet of the edge of nesting habitat that also may be used for foraging late in the breeding season. The 100-foot zone is based on the Kus and Miner (1989) study showing that most least Bell's vireo upland foraging occurs within 98 feet of the edge of riparian vegetation, with a mean distance of approximately 51 feet.

Recovery Plan

A Draft Recovery Plan for the Least Bell's Vireo (*Vireo bellii pusillus*) was published by the USFWS in 1998 (USFWS 1998B). The recovery strategy focuses on two major causes of decline of the species: (1) habitat loss and degradation and (2) brown-headed cowbird parasitism. The Draft Recovery Plan identified 14 vireo "population/metapopulation units," including the Santa Clara River population unit. The Draft Recovery Plan does not identify the geographic limits of the Santa Clara population unit, simply stating that "habitat for the [vireo] occurs in patches along much of the river, with location and quality varying from year to year as conditions in the river change following winter storm events" (USFWS 1998B, p. 58).

The Draft Recovery Plan identified the following recovery actions within the population units:

- Protect and manage riparian and adjacent upland habitats within the vireo's historical range.
- Develop management plans for the 14 population/metapopulation units that address major threats and habitat preservation. The Draft Recovery Plan (USFWS 1998B)

identifies the primary threats to native habitats in the Santa Clara River as engineered flood control facilities to protect both urban and agricultural land uses (*e.g.*, bank stabilization), pressures to provide sand and gravel, and the spread of giant reed.

- Conduct annual monitoring according to an established vireo monitoring protocol.
- Continue cowbird removal, control non-native plant species within vireo habitat areas, and establish endowments to fund these activities.
- Develop and evaluate vireo habitat restoration techniques.

Threats

The least Bell's vireo populations have declined in large part due to loss of suitable riparian habitat, degradation of suitable habitat, and nest parasitism by brown-headed cowbirds (USFWS 1998B). Clearing of suitable habitat for urban development, agriculture uses, water projects, fires, off-road vehicles, livestock, flooding from dam releases, and non-native plant species have contributed to the loss and degradation of habitat (CDFG 2000). Noise is also a potential threat to nesting least Bell's vireo. Hein (1997) identified the 60 dBA noise threshold for impacts on the least Bell's vireo based on the theory of masking. At a distance of 100 meters (328 feet), which is the diameter of a 0.8-hectare (1.98-acre) territory, approximately 50% of the least Bell's vireo's song would be masked with a background noise level of 60 dBA equivalent noise level. This level of masking was considered to have potential adverse effects on the behavioral activity, including reproduction, of the least Bell's vireo (Hein 1997). However, it should be noted that the noise threshold established by Hein (1997) for the least Bell's vireo is theoretical and that empirical studies have shown that noise impacts on avian species vary among species and depend on source, duration, and schedule, as well as different kinds of compensatory responses by different species, such as singing more loudly or at different frequencies (*e.g.*, Hirvonen 2001; Reijnen *et al.* 1996; Slabbekoorn and Peet 2003; Wood and Yezerinac 2006). Other potential urban-related threats to least Bell's vireo include dust and ground vibration during construction activities; increased human activity in proximity to nesting areas; lighting, which may induce physiological stress and increase predation risk; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; pesticides, which may reduce insect prey or cause secondary poisoning; and Argentine ants, which are especially attracted to riparian areas and may prey on nestlings.

Survey Results

Annual survey data have been collected for the least Bell's vireo in the Project vicinity between 1988 and 2007, including the Specific Plan and VCC planning areas and a portion of the Entrada planning area, as well as adjacent areas of Newhall Land property from the Las Brisas Bridge crossing on the west in Ventura County to I-5 on the east. These surveys primarily were conducted by Guthrie from 1988 through 2006, by Labinger *et al.* in various years, and by

Bloom Biological, Inc. in 2007 (Guthrie 1993B, 1995B, 1996B, 1997B, 1998A, 1999B, 2000C, 2001B, 2002C, 2003B, 2004H, 2005B, 2006A; Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A; Bloom Biological 2007A), in the VCC planning area (Guthrie 1994A, 1995A, 1996A, 2003A, 2006C), and off site in Castaic Junction (Guthrie 1988, 1990, 1991A, 1996A, 1997A, 1998B, 2000E, 2001A, 2002A, 2003A, 2004F, 2004I, 2005A, 2006C; Bloom Biological 2007A).

The least Bell's vireo, including breeding pairs, territorial males, and/or nests, has been observed almost every year along the Santa Clara River within the Specific Plan area, and over multiple years within the VCC planning area and adjacent to the Project site in Castaic Junction in riparian scrub habitat (**Figure 4.5-85**), but with yearly fluctuations in level of occupancy and breeding activity. Despite these yearly fluctuations, there are four definable "local key population" segments within the Santa Clara River that have consistently supported clusters of least Bell's vireo over the several years of riparian bird surveys: (1) a segment extending approximately 2.7 miles west of the RMDP/SCP boundary in Ventura County; (2) a segment extending from about Potrero Mesa to the confluence with Chiquito Canyon; (3) a segment extending from the Indian Dunes area to the confluence with Humble Canyon; and (4) a segment extending from about Airport Mesa to I-5 (**Figure 4.5-85**). There are scattered vireo occurrences interspersed between these local key population areas, but without a consistent clustering of occurrences.

As described above in the critical habitat discussion, this analysis addresses primary constituent elements of vireo habitat. Nesting/foraging habitat that is used throughout the least Bell's vireo breeding season primarily is southern willow scrub and southern cottonwood–willow riparian. Other riparian habitats on site that are potential nesting habitat are arrow weed scrub, mulefat scrub, and Mexican elderberry scrub and woodland. Shrub and woodland habitats within 100 feet of the edge of these nesting/foraging habitats that may be used for foraging late in the breeding season are big sagebrush scrub, alluvial scrub, California sagebrush scrubs, chaparral, coyote brush scrub, coast live oak, and valley oak.

A total of 678 acres of suitable habitat is present in the Project area, including 548 acres of suitable nesting/foraging habitat and 130 acres of shrub and woodland foraging habitat adjacent to nesting habitat (*i.e.*, within 100 feet).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 66 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 9.7% of this habitat on site (**Figure 4.5-86**, Alternative 2 Impacts to Least Bell's Vireo Habitat). Of these impacts, 59 acres are nesting/foraging habitat, representing 10.7% of this habitat on site. The remaining 6.9 acres of impact are adjacent foraging habitat only, representing 5.3% of this habitat on site. A total of 56 acres of suitable habitat would be temporarily impacted, including 55 acres of nesting/foraging habitat and 1.4 acres of foraging habitat only.

A breeding population of the least Bell's vireo consistently uses the Project area. As described above, there are four identified local key population areas in the surveyed areas of the River corridor within and adjacent to the Project area. Two of these areas fall within the RMDP and Specific Plan boundaries: the segment extending from about Potrero Mesa to the confluence with Chiquito Canyon; and the segment extending from the Indian Dunes area to the confluence with Humble Canyon. Both permanent loss and temporary impacts to nesting/foraging habitat and adjacent foraging habitat would affect the size and distribution of the least Bell's vireo breeding population both spatially and temporally in the Santa Clara River and potentially in tributaries to the River that contain suitable habitat for this species. Bank stabilization, in particular, adjacent to the two key population areas would have temporary impacts on nesting/foraging habitat for the least Bell's vireo, potentially displacing them from a portion of these areas until habitat recovered to a level suitable for nesting (**Figure 4.5-86**, Alternative 2 Impacts to Least Bell's Vireo Habitat). These permanent and temporary impacts, therefore, would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 45 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 6.6% of this habitat on site (**Figure 4.5-86**, Alternative 2 Impacts to Least Bell's Vireo Habitat). Of these impacts, 24 acres are nesting/foraging habitat, representing 4.4% of this habitat on site. Of this

nesting/foraging habitat, 17 acres are mulefat scrub, arrow weed scrub, and Mexican elderberry scrub and the remaining 6.8 acres are southern cottonwood–willow riparian forest and southern willow scrub. Because indirect impacts to suitable habitat are generally outside of the River corridor, most of these impacts are within smaller drainages that are less suitable for vireo nesting. The remaining 21 acres of impact are adjacent foraging habitat only, representing 15.9% of this habitat on site.

Although most of this indirect permanent loss of nesting/foraging habitat would occur in smaller drainages and not in the main habitat area for the least Bell's vireo in the River corridor, the loss of this nesting/foraging habitat and adjacent foraging habitat could affect the size and distribution of the least Bell's vireo breeding population in the Project area, particularly as the population continues to expand its breeding distribution in southern California. This permanent impact therefore would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 111 acres (16.3%). Of these impacts, 83 acres are nesting/foraging habitat, representing 15.1% of this habitat on site. The remaining 28 acres of impact are adjacent foraging habitat only, representing 21.2% of this habitat on site.

This combined permanent loss of nesting/foraging habitat and adjacent foraging habitat would affect the size and distribution of the least Bell's vireo breeding population in the Santa Clara River and potentially in tributaries to the River that contain suitable habitat for this species. This combined permanent impact therefore would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Least Bell's vireo is a relatively mobile species, so it is unlikely that Project-related construction activities would result in the loss of individual adult least Bell's vireos. However, implementation of the RMDP could result in injury or mortality of least Bell's

vireos due to destruction of nests and loss of young if such construction/grading activities occurred during the nesting season. In addition, construction activities could alter the least Bell's vireo's foraging behavior, potentially affecting provisioning of young and reducing their survivorship, and thus reducing reproductive success. Implementation of the SCP would not directly impact this species. Construction/grading activities such as vegetation clearing occurring during the nesting season could result in destruction of nests and the resulting loss of eggs and/or young or alteration of foraging behavior (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. Because the species has potential to nest on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could result in loss of young or eggs of this species as a result of destruction of nests (from any construction/grading activities that occur during the nesting season) or alteration of foraging behavior. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

If construction occurs during the least Bell's vireo nesting season (typically March through August), breeding individuals are likely to be substantially affected by several construction-related secondary effects**,** including noise, ground vibration, increased human activity, and nighttime illumination. These effects could alter essential behaviors such as foraging and breeding, induce physiological stress, and increase predation rates. For example, construction noise may mask singing used for territory advertisement, thus affecting breeding activity. It may also affect the ability of vireo to detect predators. Lighting may both increase stress by disrupting normal rest periods and increase predation by nocturnal predators. An addition, fugitive dust and diminished water quality and altered hydrology (*e.g.*, runoff, erosion, sedimentation) could reduce habitat quality, including insect prey.

Potential long-term secondary impacts include chronic traffic noise (which would have similar effects as construction noise); nest parasitism by cowbirds; nighttime illumination; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased predation by mesopredators. Habitat quality for the least Bell's vireo could be reduced by diminished water quality and invasion by exotic plant species, such as giant reed and tamarisk, and Argentine ants, which are attracted to riparian areas and may prey on nestlings. All of these impacts could result in lower reproductive success of the least Bell's vireo in the Project area.

Noise is considered to be potential significant threat to least Bell's vireo because of its masking effect (Hein 1997), and other potential effects on behavior such as foraging and prey detection, as described in **Subsection 4.5.5.1.3**, Secondary Impacts. Vehicular traffic will be the major chronic source of noise in the Project area following implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas. There is, however, circumstantial evidence that vireo breed in habitat adjacent to existing two high traffic volume roadways (SR-126 and I-5) in the Project area. A Dudek (2007B) traffic noise study indicated that least Bell's vireos consistently have established breeding territories in close proximity to SR-126 in areas where noise levels somewhat exceed 60 dBA (*i.e.*, 61 to 73 dBA Leq_{hr}), including three of the four key population areas shown in **Figure 4.5-68**: the segment in Ventura County west of the RMDP/SCP boundary; the segment between Potrero Mesa and Chiquito Canyon, and the segment between Airport Mesa and I-5. For example, a monitoring location in the key population area in Ventura County 120 feet from the centerline of SR-126 yielded hourly Leqs (sound energy averages) ranging from 57 dBA at 12:00 and 1:00 a.m. to 66 dBA at 6:00 a.m. The average noise level over a 24-hour period was 61 dBA, slightly above the 60 dBA threshold for adverse effects to the vireo. Sound levels at the key population area between Potrero Mesa and Chiquito Canyon were monitored at three locations that were 430 feet, 630 feet, and 1,650 feet, respectively, from the centerline of SR-126. The average noise levels over 24 hours were 54 dBA at 430 feet (range of 51 to 58 dBA), 55 dBA at 630 feet (range of 52 to 62 dBA), and 51 dBA at 1,650 feet (range of 46 to 58 dBA).

Although these data indicate that vireos occupy habitat where noise levels may exceed 60 dBA, there are no data for actual nest locations, and nests were not monitored to measure reproductive success. For the purpose of this analysis, it is assumed that chronic exposure to noise levels above 60 dBA are a substantially adverse effect on the least Bell's vireo. It is also assumed that potential nesting/foraging habitat within the 60 dBA contour line from a roadway will be degraded and less likely to be used by vireo even though other constituent habitat elements to support breeding and foraging are present.

The main areas of concern for traffic noise are along the three bridge crossings of the Santa Clara River (Potrero Canyon Road Bridge, Long Canyon Road Bridge, and Commerce Center Drive Bridge), increased traffic noise along SR-126 adjacent to the Santa Clara River, and a new road that would extend west from Long Canyon Road and run parallel to the south bank of the Santa Clara River between the River corridor and development (**Figure 4.5-87**, Alternative 2 60 dBA Noise Contours in Relation to Least Bell's Vireo). All three bridges cross the River in proximity to areas that have been occupied by the least Bell's vireo in the past, although the nearest documented vireo occurrence is more 500 feet from the Potrero Canyon Road Bridge. However, because suitable nesting/foraging habitat is present where the three bridges would cross the River, it is assumed for this analysis that vireo could nest in the areas in the future. Traffic volumes would increase on SR-126 adjacent to the River corridor between the western boundary of the Project area and the Long Canyon Bridge. The 60 dBA contour would extend from the

existing 260 feet from centerline of SR-126 to 270 feet west of Potrero Canyon Road and from the existing 270 feet from centerline to 310 feet between Potrero Canyon Road and Long Canyon Road (**Figure 4.5-87**, Alternative 2 60 dBA Noise Contours in Relation to Least Bell's Vireo).

Although the Dudek (2007B) study found that vireo establish breeding territories in areas of the Santa Clara River with noise levels somewhat exceeding 60 dBA, for the purpose of this analysis, it is assumed that suitable nesting/foraging habitat (southern willow scrub, southern cottonwood–willow riparian forest, mulefat scrub, arrow weed scrub, and Mexican elderberry scrub and woodland) within the 60 dBA contour on either side of the bridge crossing (from the bridge deck) would be degraded by noise impacts and that vireos may avoid these areas, thus reducing the amount of available suitable nesting/foraging habitat in the River corridor. A total of 2.6 acres of suitable nesting/foraging habitat, including 1.7 acres of southern cottonwood–willow riparian forest, 0.5 acre of mulefat scrub, and 0.4 acre of arrow weed scrub, occur within the 60 dBA contour, which is not otherwise accounted for in temporary impacts discussed above. Assuming that a typical least Bell's vireo territory is 1 to 3 acres (USFWS 1998B) and that vireos would tend to avoid nesting or foraging in areas subject to noise levels exceeding 60 dBA, the degradation of 2.6 acres of nesting/foraging habitat due to noise impacts would be expected to affect one territory in any given year.

As described in **Subsection 4.5.5.1.3**, Secondary Impacts, typical residential settings do not generate chronic or average noise levels above 60 dBA, although point source noise sources such as emergency vehicle sirens, loud motorcycles, and barking dogs will reach levels of 100 dBA for short periods of time. Also, residential noise, such as a dog barking or gas-powered landscape equipment, attenuates rapidly and generally would not exceed 60 dBA at typical distances between development and the River corridor. In most areas there will be at least 200 feet between the edge of development and the riverbed where vireos may be nesting (*i.e.*, a 100-foot transition area between development and top of river bank and the river bank itself). Because these noises tend to be short in duration and most will attenuate to less than 60 dBA before they reach the riverbed, they are not considered to substantially contribute to adverse noise effects.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, resulting in impacts to habitat for the least Bell's vireo, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue.

As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The easternmost trail and viewing platform are adjacent to the key population area segment extending from the Indian Dunes area to the confluence with Humble Canyon. There is a potential for secondary impacts to least Bell's vireo individuals nesting in this location. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is a potential for increased trash along the trail that could enter the River corridor. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is the potential for unauthorized trespass by the public in to sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during night hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Short-term and long-term secondary impacts would substantially adversely affect a special-status species, affect its movement and use of nursery sites (*i.e.*, breeding habitat), and substantially reduce its habitat and range (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

Impacts to USFWS Designated Critical Habitat

The Santa Clara River Critical Habitat Unit comprises approximately 4,410 acres (approximately 12%) of the total 38,000 acres of least Bell's vireo critical habitat. The Newhall Land portion of the critical habitat unit comprises approximately 4,213 acres, or about 95% of the Santa Clara River critical habitat unit and 11% of the total least Bell's vireo critical habitat. Of this, the Project area within least Bell's vireo critical habitat totals 2,252 acres (**Figure 4.5-85**).

A total of 443 acres of the 2,252-acre least Bell's vireo critical habitat designation in the Specific Plan portion within the Project area consists of primary constituent elements of vireo critical habitat. Of the 443 acres, 408 acres are southern willow scrub, southern cottonwood–willow riparian forest, mulefat scrub, arrow weed scrub, and Mexican elderberry scrub and woodland, which are breeding/foraging habitats for the least Bell's vireo. The other 35 acres are riparian/wetland and upland shrub habitats (big sagebrush scrub, sagebrush scrubs, chaparral, and coyote brush scrub) and woodlands (coast live oak, valley oak, and Mexican elderberry woodland) within 100 feet of nesting/foraging habitat that may be used for foraging, especially in the later part of the breeding season. The majority of the critical habitat designation in the

Specific Plan area (approximately 1,408 acres) is made up of upland areas, including areas currently used for agriculture, livestock grazing, and oil production that are outside the existing Santa Clara River corridor. There is no critical habitat within the VCC or Entrada planning areas.

Implementation of the RMDP and build-out of the Specific Plan area would result in a permanent loss of 51 acres of nesting/foraging habitat within critical habitat, representing a permanent loss of 12.5% of the total nesting/foraging habitat. Implementation of the RMDP and build-out of the Specific Plan area would result in the permanent loss of 11 acres of foraging habitat only within critical habitat, representing 31.5% of the total on site (**Figure 4.5-86**, Alternative 2 Impacts to Least Bell's Vireo Habitat. Overall, the permanent loss of 62 acres of habitat containing primary constituent elements represents a loss of 14.0% of the 443 acres of primary constituent elements of critical habitat as a result of construction of RMDP facilities and build-out of the Specific Plan area. An additional 49 acres of suitable habitat, including 48 acres of nesting/foraging habitat and 0.8 acre of foraging habitat only, would be temporarily impacted as a result of implementation of the RMDP. For the purpose of this analysis, any impacts to critical habitat would be significant, absent mitigation.

A determination of "destruction or adverse modification" of designated critical habitat as defined under FESA is made by the USFWS, and is not included in this EIS/EIR.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the least Bell's vireo (**Figures 4.5-89** through **4.5-93**, Alternatives 3 through 7 Impacts to Least Bell's Vireo Habitat):

- Alternative 3 – 46 acres (6.7%) permanent loss and 60 acres of temporary loss of habitat, including
  - 40 acres (7.4%) of permanent loss and 57 acres of temporary loss of nesting/foraging habitat
  - 5.3 acres (4.1%) of permanent loss and 3.2 acres of temporary loss of adjacent foraging only habitat;
- Alternative 4 – 47 acres (7.0%) permanent loss and 55 acres of temporary loss of habitat, including
  - 42 acres (7.6%) of permanent loss and 54 acres of temporary loss of nesting/foraging habitat

  - 5.5 acres (4.2%) of permanent loss and 1.0 acre of temporary loss of adjacent foraging only habitat;
- Alternative 5 – 55 acres (8.1%) permanent loss and 64 acres of temporary loss of habitat, including
  - 48 acres (8.8%) of permanent loss and 59 acres of temporary loss of nesting/foraging habitat
  - 6.7 acres (5.2%) of permanent loss and 4.5 acres of temporary loss of adjacent foraging only habitat;
- Alternative 6 – 39 acres (5.8%) permanent loss and 61 acres of temporary loss of habitat, including
  - 35 acres (6.3%) of permanent loss and 55 acres of temporary loss of nesting/foraging habitat
  - 4.5 acres (3.5%) of permanent loss and 5.3 acres of temporary loss of adjacent foraging only habitat; and
- Alternative 7 – 12 acres (1.7%) permanent loss and 46 acres of temporary loss of habitat, including
  - 9.5 acres (1.7%) of permanent loss and 40 acres of temporary loss of nesting/foraging habitat
  - 2.0 acres (1.5%) of permanent loss and 5.8 acres of temporary loss of adjacent foraging only habitat.

Compared to Alternative 2, which would result in 66 acres (9.7%) of permanent loss and 56 acres of temporary impacts, Alternatives 3 through 7 would have somewhat (Alternative 5) to substantially reduced permanent impacts (Alternative 7). Alternative 7 would have substantially reduced permanent impacts compared to Alternatives 3 through 6 as well because of the pullback of RMDP facilities from the Santa Clara River and its tributaries. Temporary impacts for Alternatives 3 through 6 would not be substantially different from Alternative 2 and Alternative 7 would be substantially reduced compared to the other alternatives.

For nesting/foraging habitat, the general pattern of reduction of permanent impacts compared to Alternative 2, which would result in 59 acres (10.7%) of permanent impacts and 55 acres of temporary impacts for Alternatives 3 through 7 would be similar to that discussed above for overall permanent impacts. For temporary impacts, Alternatives 3 through 6 would not be substantially different from Alternative 2 and Alternative 7 would be substantially reduced compared to the other alternatives.

For foraging habitat only, compared to Alternative 2, which would result in 6.9 acres (5.3%) of permanent impacts and 1.4 acres of temporary impacts, the other alternatives would result in marginally (Alternative 5) to substantially reduced permanent impacts for Alternative 7. For temporary impacts, all of the alternatives would have somewhat higher impacts compared to Alternative 2, except Alternative 4 which would have marginally reduced impacts.

As concluded for Alternative 2, both permanent loss and temporary impacts to nesting/foraging habitat and adjacent foraging habitat under Alternatives 3 through 7 would affect the size and distribution of the least Bell's vireo breeding population both spatially and temporally in the Santa Clara River and potentially in tributaries to the River that contain suitable habitat for this species. These permanent and temporary impacts, therefore, would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range. Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the least Bell's vireo (**Figures 4.5-89** through **4.5-93**, Alternatives 3 through 7 Impacts to Least Bell's Vireo Habitat):

- Alternative 3 – 37 acres (5.4%) permanent loss of habitat, including
  - 21 acres (3.9%) of permanent loss of nesting/foraging habitat
  - 15 acres (11.9%) of permanent loss of adjacent foraging only habitat;
- Alternative 4 – 34 acres (5.0%) permanent loss of habitat, including
  - 18 acres (3.3%) of permanent loss of nesting/foraging habitat
  - 16 acres (12.0%) of permanent loss of adjacent foraging only habitat;
- Alternative 5 – 31 acres (4.5%) permanent loss of habitat, including
  - 15 acres (2.8%) of permanent loss of nesting/foraging habitat
  - 16 acres (12.0%) of permanent loss of adjacent foraging only habitat;
- Alternative 6 – 21 acres (3.1%) permanent loss of habitat, including
  - 11 acres (2.0%) of permanent loss of nesting/foraging habitat
  - 10 acres (7.9%) of permanent loss of adjacent foraging only habitat; and

- Alternative 7 – 13 acres (2.0%) permanent loss of habitat, including
  - 6.4 acres (1.2%) of permanent loss of nesting/foraging habitat
  - 6.9 acres (5.3%) of permanent loss of adjacent foraging only habitat.

Compared to Alternative 2, which would result in 45 acres (6.6%) of permanent loss of habitat, Alternatives 3 through 7 would have successively reduced permanent impacts, with Alternatives 6 and 7 having substantially reduced impacts compared to the other alternatives.

For nesting/foraging habitat, compared to Alternative 2, which would result in 24 acres (4.4%) of permanent loss, this general pattern of successive reduction of permanent impacts for Alternatives 3 through 7 would be similar to overall permanent impacts.

For foraging habitat only, compared to Alternative 2, which would result in 21 acres (15.9) of permanent impacts, Alternatives 3, 4, and 5 would be somewhat reduced and Alternatives 6 and 7 would be substantially reduced, primarily due to a pullback of the Project footprint from the Santa Clara River and its tributaries.

As concluded for Alternative 2, this permanent loss of nesting/foraging habitat and adjacent foraging habitat would affect the size and distribution of the least Bell's vireo breeding population in the Santa Clara River and potentially in tributaries to the River that contain suitable habitat for this species. This permanent impact therefore would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following combined direct and indirect impacts to suitable habitat for the least Bell's vireo:

- Alternative 3 – 82 acres (12.1%) permanent loss of habitat, including
  - 62 acres (11.2%) of permanent loss of nesting/foraging habitat
  - 21 acres (16.2%) of permanent loss of adjacent foraging only habitat;
- Alternative 4 – 81 acres (12.0%) permanent loss of habitat, including
  - 60 acres (11.0%) of permanent loss of nesting/foraging habitat
  - 21 acres (16.2%) of permanent loss of adjacent foraging only habitat;

- Alternative 5 – 86 acres (12.7%) permanent loss of habitat, including
  - 64 acres (11.6%) of permanent loss of nesting/foraging habitat
  - 22 acres (17.2%) of permanent loss of adjacent foraging only habitat;
- Alternative 6 – 60 acres (8.9%) permanent loss of habitat, including
  - 46 acres (8.3%) of permanent loss of nesting/foraging habitat
  - 15 acres (11.4%) of permanent loss of adjacent foraging only habitat; and
- Alternative 7 – 25 acres (3.7%) permanent loss of habitat, including
  - 16 acres (2.9%) of permanent loss of nesting/foraging habitat
  - 8.9 acres (6.9%) of permanent loss of adjacent foraging only habitat.

Compared to Alternative 2, which would result in 110 acres (16.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have somewhat (Alternatives 3, 4, and 5) to substantially (Alternatives 6 and 7) reduced permanent impacts, with Alternative 7 having substantially reduced impacts compared to the other alternatives due to the pullback of the development footprint from the Santa Clara River and its tributaries.

For nesting/foraging habitat, compared to Alternative 2, which would result in 83 acres (15.1%) of combined permanent loss, this general pattern of reduction of permanent impacts for Alternatives 3 through 7 would be similar to overall combined permanent impacts.

For foraging habitat only, compared to Alternative 2, which would result in 28 acres (21.2%) of combined permanent impacts, Alternatives 3, 4, and 5 somewhat reduced impacts, and Alternatives 6 and 7 would have substantially reduced impacts primarily due to pullback of the Project footprint from the Santa Clara River and its tributaries.

As concluded for Alternative 2, this combined permanent loss of nesting/foraging habitat and adjacent foraging habitat would affect the size and distribution of the least Bell's vireo breeding population in the Santa Clara River and potentially in tributaries to the River that contain suitable habitat for this species. This combined permanent impact therefore would have a substantial adverse effect on the species and its habitat, substantially interfere with its movement and breeding activity, and reduce its range. The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to least Bell's vireo individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would essentially be the same as for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The least Bell's vireo is known to nest on site. Construction/grading activities, such as vegetation clearing, conducted during the breeding season could result in destruction of nests and loss of eggs and/or young where the species is nesting, and foraging behavior could be altered such that the health of young and their survivorship would be reduced, thus reducing overall reproductive success. Permanent impacts (Impacts to Individuals) would be significant, absent mitigation under Alternatives 3 through 7.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Potential short-term impacts include construction-related dust, noise, ground vibration, nighttime illumination, diminished water quality, and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; diminished water quality; exotic plant and animal species; litter; cowbird nest parasitism; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2. All of these impacts occurring under Alternatives 3 through 7 could result in lower reproductive success of the least Bell's vireo in the Project area.

As discussed in detail above for Alternative 2, traffic noise exceeding 60 dBA could degrade least Bell's vireo nesting/foraging habitat value in the River corridor where bridges cross the River, along the River corridor adjacent to SR-126 between the western boundary of the Project area and Long Canyon, and along the River corridor between Long Canyon and Potrero Canyon. Chronic traffic noise exceeding 60 dBA could cause vireos to avoid these areas for nesting and foraging. Alternatives 3 through 7 all include at least one bridge crossing of the Santa Clara River: Alternatives 3 and 4 include Long Canyon Road Bridge and Commerce Center Drive Bridge; Alternative 5 includes Potrero Canyon Road Bridge, Long Canyon Road Bridge, and Commerce Center Drive Bridge; Alternative 6 includes Potrero Canyon Road Bridge and Long Canyon Road Bridge; and Alternative 7 includes Long Canyon Road Bridge. Alternatives 3 through 7 would also generally increase noise levels adjacent to SR-126 and Walcott Road, as shown in **Figures 4.5-94** through **4.5-98**, Alternatives 3 through 7 60 dBA Noise Contours in Relation to Least Bell's Vireo. The acreages of suitable least Bell's vireo nesting/foraging habitat

currently present in the 60 dBA noise contour in these areas of the River under Alternatives 3 through 7, after temporary impacts are accounted for (as described above), are as follows:

- Alternative 3 – 2.7 acres, including 1.9 acres of southern cottonwood–willow riparian forest and 0.8 acre of mulefat scrub
- Alternative 4 – 2.7 acres, including 1.9 acres of southern cottonwood–willow riparian forest and 0.8 acre of mulefat scrub
- Alternative 5 – 2.4 acres, including 1.8 acres of southern cottonwood–willow riparian forest and 0.6 acre of mulefat scrub
- Alternative 6 – 24 acres, including 21 acres of southern cottonwood–willow riparian forest, 1.0 acre of mulefat scrub, and 2.0 acres of arrow weed scrub.
- Alternative 7 – 12 acres, including 8.5 acres of southern cottonwood–willow riparian forest, 1.3 acres of mulefat scrub, and 1.8 acres of arrow weed scrub.

The noise impacts to nesting/foraging habitat for Alternatives 2 through 5 are very similar. The noise impacts under Alternatives 6 and 7 are substantially higher because traffic volumes would be increased on sections of SR-126 compared to the other alternatives, resulting in much wider 60 dBA noise contours in these areas. These traffic volumes under Alternative 7 would be higher, for example, because Commerce Center Drive Bridge would not be constructed and, to access the south side of the Santa Clara River from SR-126, traffic would travel further west on SR-126, increasing traffic loads along the northern bank of the Santa Clara River.

As noted above for Alternative 2, noise levels in residential settings typically do not exceed 60 dBA, except for discrete loud noises such as emergency vehicle sirens, barking dogs, loud motorcycles, and gas-powered landscape equipment. Because these noises usually attenuate over relatively short distances (sirens and loud motorcycles being exceptions) and are of short duration and not chronic, they would not have a substantial adverse effect on the least Bell's vireo in the Santa Clara River.

Riparian habitat along the Santa Clara River would not be substantially affected over the long term by altered hydrology or geomorphology under Alternatives 3 through 7 (PACE 2009).

There would be no viewing platforms constructed within the River Corridor SMA under Alternatives 3 through 7.

Short-term and long-term secondary impacts would substantially adversely affect a special-status species, affect its movement and use of nursery sites (*i.e.*, breeding habitat), and substantially reduce its habitat and range. Short-term and long-term secondary impacts would be significant, absent mitigation under Alternatives 3 through 7.

Impacts to USFWS Designated Critical Habitat

Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following combined direct and indirect impacts to designated critical habitat for the least Bell's vireo:

- Alternative 3 – 42 acres (9.4%) permanent loss and 47 acres of temporary impact to critical habitat, including
    - 34 acres (8.4%) of permanent loss and 46 acres of temporary impact to nesting/foraging habitat
    - 7.2 acres (20.6%) of permanent loss and 0.4 acre of temporary impact to adjacent foraging only habitat;
- Alternative 4 – 42 acres (9.4%) of permanent loss and 47 acres of temporary impact to critical habitat, including
    - 34 acres (8.4%) of permanent loss and 46 acres of temporary impact to nesting/foraging habitat
    - 7.2 acres (20.6%) of permanent loss and 0.4 acre of temporary impact to adjacent foraging only habitat;
- Alternative 5 – 50 acres (11.2%) permanent loss and 51 acres of temporary impacts to habitat, including
    - 41 acres (10.0%) of permanent loss and 50 acres of temporary impacts to nesting/foraging habitat
    - 8.8 acres (25.2%) of permanent loss 1.7 acres of temporary impacts to adjacent foraging only habitat;
- Alternative 6 – 28 acres (6.3%) permanent loss and 49 acres of temporary impacts to habitat, including
    - 25 acres (6.1%) of permanent loss and 47 acres of temporary impacts to nesting/foraging habitat
    - 2.8 acres (8.0%) of permanent loss and 2.0 acres of temporary impacts to adjacent foraging only habitat; and
- Alternative 7 – 12 acres (2.7%) permanent loss and 34 acres of temporary impacts to habitat, including
    - 11 acres (2.6%) of permanent loss and 32 acres of temporary impacts to nesting/foraging habitat
    - 1.4 acres (4.0%) of permanent loss and 2.1 acres of temporary impact to adjacent foraging only habitat.

Compared to Alternative 2, which would result in 62 acres (14.0%) of combined permanent loss of critical habitat and 49 acres of temporary impacts, Alternatives 3 through 7 would have somewhat (Alternatives 3, 4, and 5) to substantially (Alternatives 6 and 7) reduced permanent impacts, with Alternative 7 having substantially reduced impacts compared to the other alternatives due to the pullback of the development footprint from the Santa Clara River and its tributaries.

For nesting/foraging habitat, compared to Alternative 2, which would result in 51 acres (12.5%) of combined permanent loss if critical habitat, this general pattern of reduction of permanent impacts for Alternatives 3 through 7 would be similar to overall combined permanent impacts.

For foraging habitat only, compared to Alternative 2, which would result in 11 acres (31.5%) of combined permanent impacts to critical habitat, Alternatives 3, 4 and 5 would have somewhat reduced impacts, and Alternatives 6 and 7 would have substantially reduced impacts, primarily due to pullback of the Project footprint from the Santa Clara River and its tributaries. For the purpose of this analysis, any impacts to critical habitat would be significant, absent mitigation.

A determination of "destruction or adverse modification" of designated critical habitat as defined under FESA is made by the USFWS, and is not included in this EIS/EIR.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to least Bell's vireo: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by least Bell's vireos has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and their survivorship, resulting in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and conduct monitoring during construction. If any active nest site is present within 300 feet of the disturbance or noise levels exceed 60 dBA at a nest site, work will be postponed, or otherwise restricted if the biologist determines that the construction activities are disturbing nesting activities. Monitoring will be conducted until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the least Bell's vireo resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 25 acres (3.7%) under Alternative 7 to 110 acres (16.3%) under Alternative 2. Impacts to designated critical habitat for least Bell's vireo are included in these impact acreages. Because the habitat impacted by the proposed Project is used for both nesting and foraging, this would be a substantial loss of suitable habitat for this species and could alter its use of the Project area for nesting and foraging. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable nesting and foraging habitat to support the least Bell's vireo in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 359 acres of suitable nesting/foraging habitat for the least Bell's vireo in the River Corridor SMA, including 333 acres of southern cottonwood–willow riparian forest and southern willow scrub and 26 acres of arrow weed scrub and mulefat scrub (**Figure 4.5-12,** River Corridor SMA – Generalized Vegetation Communities and Land Covers), but also including suitable habitat in tributaries in the High Country SMA, and the Salt Creek area. Mitigation will also be provided for permanent and temporary impacts to nesting/foraging habitat in ratios based on vegetation type based on the both the vegetation community type and the score that a portion or the Santa Clara River or tributary achieved using the Hybrid Assessment of Riparian Communities (HARC) method, ranging from 4:1 for southern cottonwood–willow riparian forest in a High Reach value area to 1:1 for arrow weed scrub in a Low Reach value area. The mitigation ratios for temporary impacts for suitable nesting/foraging habitat will be based on the vegetation type and the time period for the temporary impact, ranging from 1:1 for less than two years to 2:1 for over five years. Additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo would be provided for certain key habitat zones at higher ratios (identified as "key population areas" in **Figure 4.5-86,** Alternative 2 Impacts to Least Bell's Vireo Habitat). All permanent loss to nesting and foraging habitat in key population area reaches shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss shall be mitigated at a 2:1 ratio. To replace the lost functions of habitat located adjacent to the Santa Clara River as a result of noise impacts due to site development roadway improvement, all nesting/foraging habitat within the 60 dBA sound contour shall be considered degraded. Habitat within this area shall be mitigated at a ratio of 2:1**.**

With regard to secondary effects, nesting and foraging activities by the least Bell's vireo could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging and nest defense behavior, cause adults to abandon nests due to stress, and otherwise disrupt normal behavioral patterns and cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect habitat quality and the insect prey base for the least Bell's vireo, thus adversely affecting foraging

behavior and provisioning of young. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the least Bell's vireo. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include habitat fragmentation; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); invasive plant species, such as giant reed and tamarisk, and Argentine ants, which may prey on nestlings; cowbird parasitism; diminished water quality, affecting prey and nesting habitat quality; lighting; pesticides, which may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 359 acres of suitable habitat, primarily in the River Corridor SMA, but also the High Country SMA and Salt Creek area, will provide least Bell's vireos with relatively undisturbed habitat for nesting/foraging. Additional mitigation for permanent loss and temporary impacts to nesting/foraging habitat in key population areas at the ratios, as described briefly above and in more detail below, will result in a net increase in suitable nesting/foraging habitat for the vireo, offsetting the degradation of habitat adjacent to roadways due to traffic noise and other adverse edge effects. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and limit physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect least Bell's vireos by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Surveys will be conducted for cowbirds, and trapping will be implemented if necessary. Controls on Argentine ants will help reduce impacts on young in nests.

The specific mitigation measures for the least Bell's vireo are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-18 IMPACTS TO INDIVIDUALS – LEAST BELL'S VIREO (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of least Bell's vireo individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to least Bell's vireo individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity. If construction noise meets or exceeds the 60 dBA threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to least Bell's vireo individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-19 LOSS OF HABITAT – LEAST BELL'S VIREO (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the least Bell's vireo through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, which will preserve and enhance at least 359 acres of suitable nesting/foraging habitat for least Bell's vireo (see **Figure 4.5-12,** River Corridor SMA – Generalized Vegetation Communities and Land Covers).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the least Bell's vireo through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-

lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-2 sets forth CDFG jurisdictional permanent impact mitigation ratios to be implemented for permanent loss of vireo nesting/foraging habitat, including southern cottonwood–willow riparian forest, southern willow scrub, arrow weed scrub, and mulefat scrub. The mitigation ratios for permanent impacts are based on the both the vegetation community type and the score that a portion or the Santa Clara River or tributary achieved using the Hybrid Assessment of Riparian Communities (HARC) method.

BIO-55, as a supplement to BIO-2 through BIO-16, requires additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo for certain key habitat zones at higher ratios (identified as "key population areas" in **Figure 4.5-86,** Alternative 2 Impacts to Least Bell's Vireo Habitat**)**. All permanent loss of nesting/foraging habitat in key population area reaches requires the replacement or enhancement of nesting/ foraging habitat for Least Bell's vireo, defined as southern willow scrub, southern cottonwood–willow riparian, arrow weed scrub, mule fat scrub, and Mexican elderberry scrub and woodland. All permanent loss of nesting/foraging habitat shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss shall be mitigated at a 2:1 ratio. The requirements for replacing habitat by either creating new habitat or removing exotic species from existing habitat shall follow the procedures outlined in BIO-1 through BIO-16. To replace the lost functions of habitat located adjacent to the Santa Clara River, all nesting/foraging habitat within the 60 dBA sound contour shall be considered degraded. Habitat within this area shall be mitigated at a ratio of 2:1.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the least Bell's vireo would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-20 SECONDARY IMPACTS – LEAST BELL'S VIREO (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the least Bell's vireo associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as invasion by exotic plant species, abandonment of nests in response to human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for least Bell's vireo that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to avoid and minimize impacts to water quality and hydrology and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Human and pet activity in the River Corridor SMA will be controlled through implementation of SP-4.6-17, which states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect least Bell's vireo habitat and/or breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to least Bell's vireo, including short-term construction-related dust, noise, ground vibration, and

diminished water quality; and long-term impacts, such as invasive species (including exotic plants, cowbirds, and Argentine ants); increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides, such as indirect poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the least Bell's vireo during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed up stream and down stream of any river crossing or bridge construction area that will provide refuge for least Bell's vireo during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction, as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to the least Bell's vireo by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 will improve long-term habitat quality for the least Bell's vireo and include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach

value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. BIO-2, described above, sets mitigation ratios for the different types of vegetation communities based on their HARC score and whether they are permanent or temporary impacts. This mitigation will result in a net increase in suitable nesting/foraging habitat for the vireo, offsetting traffic noise impacts and other adverse edge effects.

BIO-55 requires replacement or enhancement of nesting/foraging habitat for least Bell's vireo in areas within the 60 dBA sound contour associated with development site roadway improvements. To replace the lost functions of habitat located adjacent to the Santa Clara River, all nesting/foraging habitat within the 60 dBA sound contour shall be considered degraded. Habitat within this area shall be mitigated at a ratio of 2:1.

BIO-63 and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to least Bell's vireo by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the least Bell's vireo would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

WILLOW FLYCATCHER (NESTING) (CE)/SOUTHWESTERN WILLOW FLYCATCHER (NESTING) (FE, CE)

Life History

The willow flycatcher (*Empidonax traillii*), consisting of four or five subspecies, is the most widely distributed of the *Empidonax* flycatchers. The species breeds from the north to the southern portion of Canada from the Pacific to Atlantic coasts, south within the eastern United States to the middle portion of the Midwest and southern New England states, and south within the western United States to the southern portions of Arizona and New Mexico. It is largely absent from the Great Basin area in the west and southeastern United States. It also has a sporadic breeding distribution throughout California, where three of the subspecies occur, including little willow flycatcher (*E. t. brewsteri*), *E. t. adastus* (which has no common name other than "willow flycatcher"), and southwestern willow flycatcher (*E. t. extimus*) (Craig and Williams 1998; Sedgwick 2000). The different subspecies of willow flycatcher each occupy distinct breeding ranges and have subtle differences in color and morphology (Sogge *et al.* 1997), and possibly vocalizations. The willow flycatcher winters in Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Colombia, and further in South America.

The southwestern willow flycatcher has a known United States breeding range in six states: Arizona, New Mexico, California, southwestern Colorado, extreme southern portions of Nevada and Utah, and, possibly, western Texas. In California, its breeding range extends from the Mexican border north and inland to the City of Independence in the Owens Valley east of the Sierra Nevada, to the South Fork Kern River in the San Joaquin Valley and coastally to the Santa Ynez River in Santa Barbara County (Craig and Williams 1998). The southwestern willow flycatcher was formerly a common summer resident throughout California, but has been extirpated from most of its historic breeding range in California. In California the smallest regularly occurring breeding populations consist of approximately five pairs (occurrences of one or more pairs at several sites are reported annually; however, these may not persist) and the largest is approximately 50 pairs (Haas n.d.). The number of southwestern willow flycatchers in California has been estimated at approximately 200, recorded at 22 locations within 13 drainages (Finch *et al.* 2000).

Willow flycatchers are late spring migrants and have a breeding season of three months or less (Sedgwick 2000). The earliest spring arrival of the willow flycatcher in southern California is typically between late April and early May. Along and near the California coast, migrations of *E. t. brewsteri* and *E. t. extimus* overlap, with *E. t. brewsteri* by far the more common subspecies. The numbers of *E. t. brewsteri* outweigh those of *E. t. extimus* so far that, unless detected at a known breeding site, it is almost certain that a willow flycatcher observed at a low elevation location in southern California is *E. t. brewsteri*, although positive identification in the field to subspecies level may not be possible. When a willow flycatcher is observed in southern

California after about June 22, or if nesting activity is observed, it can be concluded that the individual is *E. t. extimus* (southwestern willow flycatcher). By this date, most migrant willow flycatchers have passed through southern California; however, migrant willow flycatchers may again be observed—virtually always away from the coast—in late July as they pass through the region heading south to their wintering area (Sogge *et al.* 1997).

The southwestern willow flycatcher is a riparian-obligate species restricted to complex streamside vegetation. Four general habitat types are used by the southwestern willow flycatcher at its breeding sites: monotypic high-elevation willow; exotic monotypes (*e.g.*, dense stands of tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolius*)), especially in the desert southwest; native broadleaf-dominated riparian forest; and mixed native/exotic forests (Sogge *et al.* 1997). Of these, native broadleaf-dominated and mixed native/exotic are the primary habitats used by southwestern willow flycatcher in California. The native broadleaf-dominated habitat is composed of a single species, such as Goodding's or other willow (*Salix* spp.) species,, or a mixture of broadleaf trees and shrubs, including cottonwood (*Populus* spp.), willow, box elder (*Acer negundo*), ash (*Fraxinus* spp.), and alder (*Alnus* spp.). Stands are usually three to 15 meters (10 to 50 feet) in height and are characterized by trees of different size classes, yielding multiple layers of canopy (Sogge *et al.* 1997). In San Diego County, there has been one reported low-elevation site along the San Luis Rey River dominated by coast live oak (*Quercus agrifolia*) (Finch *et al.* 2000).

The vegetation of occupied sites includes dense patches interspersed with frequent small openings, open water, and a well-developed herbaceous layer, creating a mosaic that is not uniformly dense (Sogge *et al.* 1997). Willow flycatcher habitat may vary from small irregular patches to large contiguous areas; however, southwestern willow flycatchers typically do not nest in narrow, linear riparian habitats less than 10 meters (33 feet) wide (Sogge *et al.* 1997). Southwestern willow flycatcher nests typically occur in areas with multilayered vegetation and fairly closed (60% to 65%) tree canopy cover (Craig and Williams 1998). This has been noted in the Kern River population (Whitfield and Enos 1996). Other willow flycatcher subspecies may breed in shrubby habitat away from water; however, the southwestern willow flycatcher breeds only in riparian vegetation near surface water or saturated soil (Sogge *et al.* 1997).

Migrant (*i.e.*, non-*extimus*) willow flycatchers, especially *E. t. brewsteri* moving through southern California, typically occur in non-riparian habitats or may be found in riparian habitat patches that are otherwise unsuitable for breeding. The range of habitats used during these migration stopovers is much wider than that preferred by *E.t. extimus* for breeding and may include narrow, linear riparian strips less than 10 meters (33 feet) wide (Sogge *et al.* 1997). Such migration stopover areas may be critically important resources affecting local and regional flycatcher productivity and survival (Sogge *et al.* 1997).

Breeding territory sizes of the southwestern willow flycatcher vary greatly in relation to population density, habitat quality, and nesting stage (USFWS 2002C). The observed range of territory sizes is 0.1 to 2.30 hectares (0.26 to 5.70 acres), with most in the range of 0.2 to 0.5 hectares (0.5 to 1.2 acres) (USFWS 2002C). Clutches of two to four eggs are laid in the third week in June, with fledglings first appearing in mid-July (Sanders and Flett 1989). Fledglings stay close to the nest and to each other for three to five days after leaving the nest and stay in the area for a minimum of 14 to 15 days (Sogge *et al.* 1997).

Small breeding populations of the willow flycatcher (*e.g.*, one or two pairs) may be ephemeral and persist for only a few years. Breeding populations may also reappear at previously occupied sites after one- to five-year absences (Sedgwick 2000). Consequently, Sogge *et al.* (1997) concluded that it cannot be assumed that a habitat is unsuitable or unoccupied in the long term based on flycatchers' absence during a single year, especially if there is evidence of recent use.

Willow flycatchers are insectivores and forage by aerially gleaning prey (capturing insects, for example, while hovering) from trees, shrubs, and herbaceous vegetation or by hawking (capturing in flight) larger insects (Ettinger and King 1980; Sanders and Flett 1989). In one study in Sequoia and Kings Canyon National Parks (Summer and Dixon 1953), about 96% of their diet was animal matter and 4% vegetable matter, such as elderberries and blackberries. Their insect diet included wasps, bees, beetles, flies, caterpillars, moths, grasshoppers, and, occasionally, berries (Craig and Williams 1998), with wasps and bees being the most common component of their diet, followed by beetles.

Critical Habitat

On October 19, 2005, critical habitat was designated for the southwestern willow flycatcher (70 FR 60886–61009). Critical habitat in California is designated in Kern, Santa Barbara, San Bernardino, and San Diego counties. Because no critical habitat is designated for Ventura and Los Angeles counties, critical habitat for the southwestern willow flycatcher is not further addressed in this EIS/EIR.

Recovery Plan

The Final Recovery Plan for the Southwestern Willow Flycatcher was published by the USFWS on August 30, 2002 (USFWS 2002C). Nine recovery actions for the southwestern willow flycatcher were identified in the Final Recovery Plan: "1. Increase and improve occupied suitable habitat, and potential breeding habitat; 2. Increase metapopulation stability; 3. Improve demographic parameters; 4. Minimize threats to wintering and migration habitat; 5. Survey and monitor; 6. Conduct research; 7. Provide public education and outreach; 8. Assure implementation of laws, policies, and agreements that benefit the flycatcher; 9. Track recovery" (USFWS 2002C, p. v).

The Project area is located within the Coastal California Recovery Unit of the Final Recovery Plan, and establishment of new territories is part of the recovery criteria for the subspecies. Within the Santa Clara River, the reach from Bouquet Canyon Road to the Pacific Ocean, which crosses through the Project area, has been identified as a Management Unit where recovery actions should be focused (USFWS 2002C).

Threats

The decline of southwestern willow flycatchers is primarily due to loss, fragmentation, and degradation of suitable riparian habitat resulting from urbanization, recreation, water diversion and impoundments, channelization, invasive plant species, overgrazing by livestock, and conversion of riparian habitat to agricultural land (USFWS 2002C; Sedgwick 2000). Channelization, bank stabilization, levees, and other flow control structures, surface water diversions, and groundwater pumping for agricultural, industrial, and municipal uses are major factors in the deterioration of suitable southwestern willow flycatcher habitat. Agricultural effects include direct removal of riparian vegetation, floodplains alteration, water diversion and groundwater pumping for irrigation, and application of pesticides (herbicides and insecticides), which may affect habitat quality and insect prey, and result in secondary poisoning. Grazing of willows by domestic livestock changes the willow foliage height and volume, reducing habitat quality for southwestern willow flycatcher (Taylor 1986). Agriculture, cattle operations, and urban development attract brown-headed cowbirds that parasitize nests, especially in riparian edge areas or areas where breeding habitat has been degraded, leading to population reductions. Non-native plant species such as tamarisk and giant reed also reduce habitat quality and affect breeding. For example, tamarisk may alter insect fauna and change thermal protection from foliage (Sedgwick 2000), although southwestern willow flycatcher nests in areas where tamarisk is dominant (Durst *et al.* 2006). Urban-related predators, such as domestic house cat, and natural predators that are attracted to urban settings, such as ravens, may affect the southwestern willow flycatcher by increasing predation (Sogge *et al.* 1997). Diminished water quality and altered hydrology during construction and over the long term resulting from urban runoff could affect riparian habitat quality and insect prey for the willow flycatcher both during migration and for breeding. Other urban-related impacts that may affect southwestern willow flycatcher include nighttime lighting and noise, which may both induce physiological stress and increase predation (*e.g.*, predator presence may be masked by ambient noise). Argentine ants, which are attracted to moist habitats in urban settings, may prey on nestlings. Construction-generated dust could affect water quality and insect prey, thus reducing overall habitat quality.

Survey Results

Surveys for riparian birds have been conducted for multiple years from 1988 to 2007 along the Santa Clara River within suitable habitat for the southwestern willow flycatcher (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A,

1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.* in 1994, 1996, and 1997 (1995, 1996, 1997A, 1997B); and by Labinger and Greaves in 1998 (1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 (2007A).

Between 1993 and 1998, surveys were conducted in conjunction with surveys for least Bell's vireo, and although protocol southwestern willow flycatcher surveys were not conducted during these years, willow flycatchers were observed within the Project area in three separate years during this period (Guthrie 1993B, 1997B, 1998A). Southwestern willow flycatcher habitat within the Project area has been surveyed annually from 1999 to 2007 following the USFWS protocol for this species and willow flycatchers were observed during several survey years (Guthrie 1999B, 2000C, 2001B, 2002C, 2004H, 2005B; Bloom Biological 2007A).

Any willow flycatcher (*i.e.*, all subspecies of the willow flycatcher) occurring within the boundaries of California is state-listed as endangered. Willow flycatchers, almost certainly all of which were *E. t. brewsteri*, have been detected almost every year within the River corridor in the Project area during the focused bird surveys since 1997, but nesting by the southwestern willow flycatcher has not been confirmed. All of the individuals of the willow flycatcher documented within the Project area were considered to be migrants (*i.e.*, *E. t. brewsteri*) or transients (possibly *E. t. extimus*) because they were only detected once during the survey period, and nesting was never documented. Rarely, a location may have supported willow flycatchers twice (possibly not the same individuals) within a survey season, but no individuals were observed after June 22. Although nesting by the southwestern willow flycatcher has not been documented in the Project area, recent nesting in the Santa Clara River has been documented near Fillmore, downstream of the Project area. Two breeding pairs were observed in 2006 by J. Gallo, with one nest producing two successful fledglings and the other failing (Root 2008).

Currently, the Project area appears to be a migratory stop for one or more of the subspecies of willow flycatcher. (Note, however, that southwestern willow flycatchers do not appear to use any stopover locales *en route* to California breeding sites.) Evidence of willow flycatcher nesting has not been documented on site. In the unlikely event that southwestern willow flycatcher numbers increase dramatically, and nearby breeding populations also become established, this subspecies could colonize suitable areas of the Santa Clara River within the Project area for nesting. The breeding pairs observed near Fillmore in 2006 indicate the potential for breeding on site in the future. For this reason, this EIS/EIR analyzes impacts both to migration habitat for the willow flycatcher and to suitable nesting and foraging habitat for the southwestern willow flycatcher

subspecies, including potential future impacts to nesting individuals should the southwestern willow flycatcher breeding population expand to the Project area.

Southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub are migration habitats for the willow flycatcher. These habitats could also be used for nesting in the future should the southwestern willow flycatcher attempt to breed on site. There is a total of 445 acres of suitable migration and nesting habitat for willow flycatcher in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 39 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

Because the willow flycatcher is state-listed endangered and the southwestern willow flycatcher subspecies is also a federally listed endangered species, the permanent loss of migration, nesting, and foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities associated with implementation of the RMDP and the SCP would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 7.8 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 1.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the willow flycatcher is state-listed endangered and the southwestern willow flycatcher subspecies is also a federally listed endangered species, the permanent loss of migration, nesting, and foraging habitat that would occur as a result of construction and/or grading activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 47 acres (10.4%).

Because the willow flycatcher is state-listed endangered and the southwestern willow flycatcher subspecies is also a federally listed endangered species, the combined direct and indirect permanent loss of migration, nesting, and foraging habitat as a result of construction and/or grading activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The willow flycatcher is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in the direct loss of individual adult birds. However, if the southwestern willow flycatcher subspecies nests on site in the future, vegetation clearing associated with implementation of the RMDP could result in destruction of eggs and/or injury or mortality of young due to destruction of nests if these activities occurred during the nesting season of this species. In addition, construction activities could alter the southwestern willow flycatcher's foraging behavior, potentially affecting the health of young and their survivorship, potentially reducing reproductive success. Implementation of the SCP would not directly impact this species. Impacts to eggs or young would be a substantial adverse effect on a special-status species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. Because the species has potential to nest on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could result in loss of young or eggs of this species as a result of destruction of nests from any construction/grading activities that occur during the nesting season or alteration of foraging behavior. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, and nighttime illumination. These impacts could alter essential behaviors such as foraging and breeding, induce physiological stress, and increase predation rates. Fugitive dust and diminished water quality and altered hydrology (*e.g.*, runoff, erosion, sedimentation) could reduce habitat quality, including insect prey. Although construction would be of a short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on the southwestern willow flycatcher due to potential disruption of breeding and nesting activities.

Potential long-term secondary impacts associated with urban development would be the same as those described above for least Bell's vireo. These impacts include traffic noise; nighttime illumination; invasion by exotic species such as giant reed, tamarisk, and Argentine ants; increased litter; diminished water quality and altered hydrology; brown-headed cowbird nest parasitism; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may alter essential activities such as foraging and breeding, induce physiological stress, interfere with care of young, and result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term. However, the noise impact analysis for vireo is primarily related to nesting activity. The southwestern willow flycatcher has not been documented to nest in the Project area, and therefore the noise analysis is limited to migrating individuals. Secondary effects from noise are not expected to have the same level of impacts as the nesting least Bell’s vireos, because migrants are not establishing territories on site and are using the area on a transitory basis. Large areas within the River corridor would remain below the 60 dBA noise threshold, and migratory birds would be able to continue using these areas.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, resulting in impacts to migration habitat for the willow flycatcher and nesting habitat for the southwestern willow flycatcher subspecies, are also potential long-

term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The easternmost trail and viewing platform is adjacent to the key population area segment extending from the Indian Dunes area to the confluence with Humble Canyon. There is a potential for secondary impacts to willow flycatcher nesting in this location. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is a potential for increased trash along the trail that could enter the River corridor. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is the potential for unauthorized trespass by the public in to sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during night hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Short-term and long-term secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the willow flycatcher and southwestern willow flycatcher subspecies (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 25 acres (5.6%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 26 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 31 acres (7.0%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 17 acres (3.9%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.8%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 39 acres (8.7%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially reduced. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3, 4, 5, and 6 be marginally to somewhat different. The temporary loss of habitat under Alternative 7 would be substantially reduced, compared to Alternative 2. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Although the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to Alternative 2, and temporary impacts would be marginally to substantially different, impacts to habitat for a state-listed and federally listed endangered species would still occur. These direct and temporary impacts (Loss of Habitat) therefore would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the willow flycatcher and southwestern willow flycatcher subspecies (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 6.9 acres (1.6%) of permanent loss;
- Alternative 4 – 3.5 acres (0.8%) of permanent loss;
- Alternative 5 – 2.6 acres (0.6%) of permanent loss;
- Alternative 6 – 1.3 acres (0.3%) of permanent loss; and
- Alternative 7 – 0.7 acre (0.1%) of permanent loss.

Compared to Alternative 2, which would result in 7.8 acres (1.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 and 5 would have somewhat reduced impacts compared to Alternative 3 and Alternatives 6 and 7 would have additional reductions to impacts to willow flycatcher/southwestern willow flycatcher suitable habitat compared to the other alternatives.

Although the permanent loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, impacts to habitat for a state-listed and federally listed endangered species would still occur. These indirect permanent impacts (Loss of Habitat) therefore would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the willow flycatcher and southwestern willow flycatcher subspecies:

- Alternative 3 – 32 acres (7.2%) of permanent loss;
- Alternative 4 – 29 acres (6.5%) of permanent loss;
- Alternative 5 – 34 acres (7.5%) of permanent loss;
- Alternative 6 – 19 acres (4.2%) of permanent loss; and
- Alternative 7 – 8.5 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (10.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions to impacts to willow flycatcher/southwestern willow flycatcher suitable habitat in the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2.

Although the combined direct and indirect permanent loss of habitat from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, impacts to habitat for a state-listed and federally listed endangered species would still occur. The combined direct and indirect permanent impacts (Loss of Habitat) therefore would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to willow flycatcher/southwestern willow flycatcher individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Although adult birds would likely avoid impacts, if nesting by southwestern willow flycatcher occurs in the Project area in the future, destruction of eggs and/or injury or mortality of young due to destruction of nests could occur if vegetation clearing activities occurred during the nesting season of the southwestern willow flycatcher. Foraging behavior by willow flycatcher/southwestern willow flycatcher also may be altered. Direct and indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation, under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Potential short-term impacts include construction-related dust, noise, ground vibration, nighttime illumination, diminished water quality, and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; diminished water quality; exotic plant and animal species; litter; cowbird nest parasitism; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2. Riparian habitat along the Santa Clara River would not be substantially affected over the long term by altered hydrology or geomorphology under Alternatives 3 through 7 (PACE 2009).

There would be no viewing platforms constructed within the River Corridor SMA under Alternatives 3 through 7.

These potential short-term and long-term secondary effects would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to willow flycatcher and the southwestern willow flycatcher subspecies: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Willow flycatchers have been documented using the Santa Clara River within the Project area during migration, but nesting by the southwestern willow flycatcher subspecies has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, this subspecies has been documented to breed downstream in the Fillmore area (Root 2008), and there is some potential that it could nest on site in the future. While adult willow flycatchers are highly mobile and migrants are likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to breeding southwestern willow flycatcher individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior of southwestern willow flycatchers and thus potentially reduce the health of young and their survivorship, resulting in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable migrant habitat for the willow flycatcher and potential nesting habitat for the southwestern willow flycatcher subspecies resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 8.5 acres (1.9%) under Alternative 7 to 47 acres (10.4%) under Alternative 2. Because this habitat is used by migrants and potentially by nesting individuals of a listed species, this would be a substantial loss of suitable habitat for this species and could alter its use of the Project area for foraging and potentially for nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging and potential nest habitat to support the willow flycatcher/southwestern willow flycatcher in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 314 acres of

suitable habitat for the willow flycatcher/southwestern willow flycatcher, in the River Corridor SMA (**Figure 4.5-12**, River Corridor SMA – Generalized Vegetation Communities and Land Covers), but also including suitable habitat in tributaries in the High Country SMA and the Salt Creek area (approximately 8 acres).

With regard to secondary effects, foraging activities and potentially nesting by the willow flycatcher/southwestern willow flycatcher could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging and potentially nest defense behavior by breeding southwestern willow flycatchers, cause adult southwestern willow flycatchers to abandon nests due to stress, and otherwise disrupt normal behavioral patterns and cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect habitat quality and the insect prey base for the willow flycatcher/southwestern willow flycatcher, thus adversely affecting foraging behavior and potentially provisioning of young by southwestern willow flycatcher. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the willow flycatcher/southwestern willow flycatcher. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include habitat fragmentation; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); invasive species such as giant reed and tamarisk and Argentine ants, which may prey on nestlings; cowbird parasitism; increased noise; diminished water quality, affecting prey and nesting habitat quality; lighting; pesticides, which may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 314 acres of suitable habitat in the River Corridor SMA, but also a small amount of habitat in the High Country SMA and Salt Creek area, will provide the willow flycatcher/southwestern willow flycatcher with relatively undisturbed habitat for foraging during migration and potentially for nesting by southwestern willow flycatcher. Lighting restrictions along the perimeter of natural areas will help reduce predation of any nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect willow flycatcher/southwestern willow flycatcher by allowing them to forage and potentially nest without disturbance. Controls on pesticides will reduce the chance of secondary poisoning

and loss of prey. Surveys will be conducted for cowbirds and trapping will be implemented if necessary. Controls on Argentine ants will help reduce impacts to young in nests.

The specific mitigation measures for the willow flycatcher/southwestern willow flycatcher are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-21 IMPACTS TO INDIVIDUALS – WILLOW FLYCATCHER/SOUTHWESTERN WILLOW FLYCATCHER (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate impacts to willow flycatcher individuals, including nesting southwestern willow flycatcher individuals, through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to willow flycatcher individuals, including nesting southwestern willow flycatcher individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing

and construction in the vicinity. If construction noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to willow flycatcher individuals, including nesting southwestern willow flycatcher individuals, would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-22 LOSS OF HABITAT – WILLOW FLYCATCHER/SOUTHWESTERN WILLOW FLYCATCHER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the willow flycatcher/southwestern willow flycatcher through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, which will preserve and enhance 314 acres of suitable habitat for willow flycatcher/southwestern willow flycatcher (**Figure 4.5-12**, River Corridor SMA – Generalized Vegetation Communities and Land Covers).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the willow flycatcher/southwestern willow flycatcher through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the willow flycatcher/southwestern willow flycatcher would be adverse but not significant.

IMPACT 4.5-23 SECONDARY IMPACTS – WILLOW FLYCATCHER/SOUTHWESTERN WILLOW FLYCATCHER (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the willow flycatcher/southwestern willow flycatcher associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as traffic noise, invasion by exotic plant species, abandonment of nests from human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for southwestern willow flycatcher that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to avoid and minimize impacts to water quality and hydrology as well as inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Human and pet activity in the River Corridor SMA will be controlled through implementation of SP-4.6-17, which states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect willow flycatcher/southwestern willow flycatcher habitat and/or migrant and breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to willow flycatcher/southwestern willow flycatcher, including short-term construction-related dust, noise, ground vibration, and diminished water quality, and long-term impacts, such as invasive species (including exotic plants, cowbirds, and Argentine ants); increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as indirect poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the willow flycatcher/southwestern willow flycatcher during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for willow flycatcher/southwestern willow flycatcher during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to willow flycatcher/southwestern willow flycatcher by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 will improve long-term habitat quality for the willow flycatcher/southwestern willow flycatcher and include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-55 requires replacement or enhancement of nesting and foraging habitat for southwest willow flycatcher. All permanent loss to nesting and foraging habitat shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss shall be mitigated at a 2:1 ratio. To replace the lost functions of habitat located adjacent to the Santa Clara River, all nesting and breeding habitat within the 60 dBA sound contour shall be considered degraded. Habitat within this area shall be mitigated at a ratio of 2:1.

BIO-63 and BIO-73 will be implemented to mitigate for increased human activity, and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impact to willow flycatcher/southwestern willow flycatcher by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help

prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the willow flycatcher/southwestern willow flycatcher would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

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WESTERN YELLOW-BILLED CUCKOO (NESTING) (FC, BCC, CE)

Life History

The yellow-billed cuckoo (*Coccyzus americanus*) occurs as a breeding bird in temperate North America, south to Mexico, and the Greater Antilles. It possibly breeds in Central America and northwestern South America, although its breeding range may be confused by reports of non-breeding adult vagrants outside of known breeding areas during the breeding season. The northern limit of its distribution extends west from southern Maine through southern New Hampshire, Vermont, northern and central New York, extreme southwestern Quebec, southern Ontario, the Upper Peninsula of Michigan, northern Minnesota, and possibly into southeastern North Dakota and northeastern and western South Dakota (Hughes 1999). Its breeding range extends southward along the Atlantic Coast to southern Florida, and west to the extreme eastern portion of Wyoming, the eastern plains of Colorado, and throughout Texas (Hughes 1999). The yellow-billed cuckoo is extremely rare and local in the northern Rocky Mountain area and the Great Plains, locally breeding in southeastern Montana, southern Idaho, southern Wyoming, and most of Utah (Hughes 1999). The yellow-billed cuckoo is rare and local in the southwestern Unites States. It breeds along the major river valleys in southern and western New Mexico, and central and southern Arizona. It occurs at isolated sites in the Sacramento Valley in northern California, and along the Kern and Colorado river systems in southern California (Gaines and Laymon 1984; Laymon and Halterman 1989).

Two subspecies of the yellow-billed cuckoo are recognized, eastern yellow-billed cuckoo (*C. a. americanus*) and western yellow-billed cuckoo (*C. a. occidentalis*), although the validity of the taxonomic grouping has been debated (Franzreb and Laymon 1993). The two subspecies are separated by their geographic distribution. The western yellow-billed cuckoo's range is considered to be where it formerly bred from southwestern British Columbia, western Washington, northern Utah, central Colorado, and western Texas south and west to southern Baja California, Sinaloa, and Chihuahua in Mexico (Hughes 1999). The eastern yellow-billed cuckoo's range is considered to be the remainder of the species' range in eastern North America, eastern Mexico, and the Greater Antilles. The boundary between the two subspecies is considered to be the Pecos River in Texas (Hughes 1999).

In California, the western yellow-billed cuckoo's breeding distribution is now thought to be restricted to isolated sites in the Sacramento, Amargosa, Kern, Santa Ana, and Colorado river valleys (Laymon and Halterman 1987).

Breeding habitat for the western yellow-billed cuckoo primarily consists of large blocks of riparian habitat, particularly cottonwood–willow riparian woodlands (66 FR 38611–38626). Laymon and Halterman (1989) proposed that the suitable habitat for the western yellow-billed cuckoo for California be defined as habitat classified as willow–cottonwood with a patch size greater than 80 hectares (198 acres) and width greater than 600 meters (1,270 feet). It prefers

dense riparian thickets with dense low-level foliage near slow-moving water sources. Although it is usually found in habitats where willow (*Salix* spp.) is a dominant component, they have been observed in mesquite thickets along the Colorado River and orchards in the Sacramento Valley (Zeiner *et al.* 1990A). Nests are constructed in willows on horizontal branches in trees, shrubs, and vines, but cottonwoods (*Populus* spp.) are used extensively for foraging and humid lowland forests are used during migration (Hughes 1999).

Clutches of two or three eggs are laid in mid-June to mid-July and incubation occurs over nine to 11 days. Development of the young is very rapid, with fledgling occurring in six to nine days; the entire breeding cycle may be only 17 days from egg-laying to fledging of the young (66 FR 38611). Cuckoos are a monogamous species and both sexes incubate and care for the young (Zeiner *et al.* 1990A). The yellow-billed cuckoo has been noted to be both an intraspecific and interspecific brood parasite (Hughes 1999); however, this appears to only occur in the eastern yellow-billed cuckoo. The western yellow-billed cuckoo is rarely parasitized by the brown-headed cowbird; however, it is not considered to be common and it was assumed that the cowbird was not successful due to the short breeding period of the yellow-billed cuckoo (Hughes 1999). The degree to which the western yellow-billed cuckoo shows site fidelity is unknown; however, the absence of pairs on known breeding sites in some years and presence of breeding birds on previously vacant sites suggests that breeding may not occur in the same location every year (Gaines and Laymon 1984).

The western yellow-billed cuckoo is a long-distance migrant, though details of its migration patterns are not well known (Hughes 1999). It is a relatively late spring migrant, arriving on the breeding grounds starting mid- to late May (Franzreb and Laymon 1993). The migratory route of western yellow-billed cuckoos is not well known because few specimens collected on wintering grounds have been ascribed to the western or eastern subspecies. The western yellow-billed cuckoo likely moves down the Pacific Slope of Mexico and Central America to northwestern South America (Hughes 1999).

Yellow-billed cuckoos generally forage for caterpillars and other large insects by gleaning (Hughes 1999). They occasionally prey on small lizards, frogs, eggs, and young birds as well (Zeiner *et al.* 1990A). Foraging occurs extensively in cottonwood riparian habitat (Hughes 1999).

The western yellow-billed cuckoo is sensitive to habitat fragmentation and degradation of riparian woodlands due to agricultural and residential development (Hughes 1999), and major declines among western populations reflect local extinctions and low colonization rates (Laymon and Halterman 1989). Even where habitat is not degraded, they have been extirpated from breeding areas occupied by four or fewer pairs (Laymon and Halterman 1987), possibly due to the inherent instability of small populations (Laymon and Halterman 1989). Extensive surveys (1986 to 1987) indicated that only 30 to 33 pairs and 31 unmated males remain in California,

with the reason for the high number of unmated males being unknown (Laymon and Halterman 1989). Non-native invasive species such as tamarisk may preclude use by western yellow-billed cuckoos; previously occupied willow–cottonwood habitats that type-converted to monotypic stands of tamarisk were no longer inhabited (Laymon and Halterman 1987). Pesticides may affect behavior of western yellow-billed cuckoo by loss of balance or may cause death by direct contact. Sublethal poisoning of young by pesticides has been caused by spraying active nests in walnut orchards, and individuals have been observed falling from trees, and dead or dying with symptoms of poisoning, within days of DDT spraying to control Dutch elm disease (Hughes 1999). Pesticides may contaminate preferred prey items, particularly lepidopteran larva. In addition, some prey species, such as frogs, occur in pesticide-laden runoff adjoining agricultural land (Laymon and Halterman 1987). The western yellow-billed cuckoo also has shown pesticide effects on reproduction due to eggshell thinning (Gaines and Laymon 1984; Laymon and Halterman 1987). Like other riparian bird species, several other potential human- or development-related factors may affect western yellow-billed cuckoos. Construction-related impacts include dust; noise and ground vibration; diminished water quality and altered hydrology; increased human activity in close proximity to foraging areas; and lighting which may alter foraging behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include increased human activity; noise; lighting; diminished water quality and altered hydrology; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and brown-headed cowbird nest parasitism.

Survey Results

Surveys for riparian birds have been conducted for multiple years from 1988 to 2007 along the Santa Clara River within suitable habitat for the western yellow-billed cuckoo (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.* in 1994, 1996, and 1997 (1995, 1996, 1997A, 1997B); and by Labinger and Greaves in 1998 (1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 (2007A). The western yellow-billed cuckoo has occasionally been documented within the River corridor during these surveys, although the locations of these observations were not mapped. This species has been observed historically in 1979, 1981, and 1992 (Labinger *et al.* 1997A); however, no observations of nesting, paired, or territorial western yellow-billed cuckoos have been documented within the Project area.

Currently, the Project site appears to be a migratory stop for individual western yellow-billed cuckoos but may also be used for post-migratory movements. Some suitable nesting and

foraging habitat is present within the Project area in southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub communities. If the population of the western yellow-billed cuckoo becomes more abundant, this species may expand its breeding territory to suitable areas of the Santa Clara River. For this reason, this EIS/EIR analyzes impacts to suitable nesting and foraging habitat for the western yellow-billed cuckoo and potential future impacts to nesting individuals should the breeding population expand to the Project area. This approach thus also accounts for impacts that would occur to suitable migratory stopover habitat. A total of 446 acres of suitable habitat is present within the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 39 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

Because the western yellow-billed cuckoo is a state-listed endangered species, the permanent loss of nesting and foraging habitat and temporary impacts as a result of construction and/or grading activities associated with implementation of the RMDP and the SCP would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 7.8 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 1.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the western yellow-billed cuckoo is a state-listed endangered species, the permanent loss of nesting and foraging habitat as a result of construction and/or grading activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 47 acres (10.4%).

Because the western yellow-billed cuckoo is a state-listed endangered species, the combined direct and indirect permanent loss of nesting and foraging habitat as a result of construction and/or grading activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the species or its habitat; substantially interfere with the movement and breeding activity of the species; and reduce its range (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The western yellow-billed cuckoo is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in the direct loss of individual adult birds. However, if the species were to nest on site, implementation of the RMDP could result in injury or mortality of western yellow-billed cuckoos due to destruction of nests and loss of young if such construction/grading activities occurred during the nesting season. In addition, construction activities could alter the western yellow-billed cuckoo's foraging behavior, potentially affecting the health of young and their survivorship and potentially reducing reproductive success. Implementation of the SCP would not directly impact this species. Construction/grading

activities, such as vegetation clearing, occurring during the nesting season could result in destruction of nests and resulting in loss of eggs and/or young (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The western yellow-billed cuckoo is a relatively mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. However, if the western yellow-billed cuckoo nests on site in the future, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species In addition, alteration of foraging behavior could adversely affect provisioning of young. Destruction of nests or eggs, injury or mortality of young, or disruption of foraging activities would be a substantial adverse effect on a special-status species (significance criterion 1). Indirect, permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, diminished water quality and altered hydrology, and nighttime illumination. Fugitive dust and diminished water quality and altered hydrology (*e.g.*, runoff, erosion, sedimentation) could reduce habitat quality, including insect prey. Lighting could induce physiological stress and increase risk of predation. Although construction would be short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of breeding and nesting activities.

Potential long-term secondary impacts associated with urban development would be the same as those described above for least Bell's vireo. These impacts include traffic noise; nighttime illumination; invasion by exotic species such as giant reed, tamarisk, and Argentine ants (which may prey on nestlings); diminished water quality and altered hydrology; increased litter; cowbird nest parasitism; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term. However, the noise impact analysis for vireo is primarily related to nesting activity. The western yellow-billed cuckoo has not been documented to nest in the project area, and therefore the noise analysis is limited to migrating individuals. Secondary effects from noise are not expected to have the same level of impacts as to nesting least Bell’s vireo, because

migrants are not establishing territories on site and are using the area on a transitory basis. Large areas within the River corridor remain below the 60 dBA noise threshold, and migratory birds would be able to continue using these areas.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, and resulting impacts to nesting habitat for the western yellow-billed cuckoo, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The easternmost trail and viewing platform is adjacent to the key population area segment extending from the Indian Dunes area to the confluence with Humble Canyon. There is a potential for secondary impacts to western yellow-billed cuckoo nesting in this location. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is a potential for increased trash along the trail that could enter the River corridor. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is the potential for unauthorized trespass by the public in to sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during night hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Short-term and long-term secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the western yellow-billed cuckoo (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 25 acres (5.6%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 26 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 31 acres (7.0%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 17 acres (3.9%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.8%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 39 acres (8.7%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially reduced. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat different and the loss of habitat under Alternative 7 would be substantially less. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Although the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to Alternative 2, and temporary impacts would be similar to substantially reduced, impacts to habitat for a state-listed endangered species would still occur. These direct permanent and temporary impacts (Loss of Habitat) therefore would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the western yellow-billed cuckoo (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 6.9 acres (1.6%) of permanent loss;
- Alternative 4 – 3.5 acres (0.8%) of permanent loss;
- Alternative 5 – 2.6 acres (0.6%) of permanent loss;
- Alternative 6 – 1.3 acres (0.3%) of permanent loss; and
- Alternative 7 – 0.7 acre (0.1%) of permanent loss.

Compared to Alternative 2, which would result in 7.8 acres (1.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternative 4 would have somewhat reduced impacts compared to Alternative 3 (which is marginally different than Alternative 2) and Alternatives 5, 6, and 7 would have additional reductions compared to the other alternatives.

Although the permanent loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, impacts to habitat for a state-listed endangered species would still occur. These indirect permanent impacts (Loss of Habitat) therefore would be significant, absent mitigation under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the western yellow-billed cuckoo:

- Alternative 3 – 32 acres (7.2%) of permanent loss;
- Alternative 4 – 29 acres (6.5%) of permanent loss;
- Alternative 5 – 34 acres (7.5%) of permanent loss;
- Alternative 6 – 19 acres (4.2%) of permanent loss; and
- Alternative 7 – 8.5 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (10.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2.

Although the combined direct and indirect permanent loss of habitat from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC

(Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, impacts to habitat for a state-listed endangered species would still occur. The combined direct and indirect permanent impacts (Loss of Habitat) therefore would be significant, absent mitigation under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to western yellow-billed cuckoo individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. If the western yellow-billed cuckoo were to nest on site in the future, construction/grading activities, such as vegetation clearing, conducted during the breeding season could result in destruction of nests and loss of eggs and/or young where the species is nesting, and foraging behavior could be altered such that the health of young and their survivorship and overall reproductive success would be reduced. Permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar impacts as those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Potential short-term impacts include construction-related dust, noise, ground vibration, nighttime illumination, diminished water quality and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; diminished water quality; exotic plant and animal species; litter; cowbird nest parasitism; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2. All of these impacts occurring under Alternatives 3 through 7 could result in lower reproductive success of the western yellow-billed cuckoo were it to nest in the Project area in the future.

Riparian habitat along the Santa Clara River would not be substantially affected over the long term by altered hydrology or geomorphology under Alternatives 3 through 7 (PACE 2009).

There would be no viewing platforms constructed within the River Corridor SMA under Alternatives 3 through 7.

These potential short-term and long-term secondary effects would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western yellow-billed cuckoo: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Although individuals have been occasionally observed in the Santa Clara River within the Project area, nesting by western yellow-billed cuckoos has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. Observed individuals were assumed to be migrants. While migrating adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, foraging and resting could be affected by construction activities if birds are flushed from habitat or otherwise avoid construction areas. If the western yellow-billed cuckoo were to nest on site in the future, construction activities such as vegetation clearing could result in impacts to individuals, including injury and mortality, if active nests with eggs or young are disturbed or destroyed. Construction activities may also alter foraging behavior by adults and thus potentially reduce the health of young and their survivorship and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the western yellow-billed cuckoo resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 8.5 acres (1.9%) under Alternative 7 to 47 acres (10.4%) under Alternative 2. This would be substantial loss of suitable foraging and resting habitat, and potentially nesting habitat, for this species and could alter its use of the Project area for foraging and resting, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging and resting habitat and potential nesting habitat to support the western yellow-billed cuckoo in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 314 acres of suitable habitat for the western yellow-billed cuckoo in the River Corridor SMA (**Figure 4.5-12,**

River Corridor SMA – Generalized Vegetation Communities and Land Covers), and also a small amount of habitat in the High Country SMA and Salt Creek area (approximately 8 acres).

With regard to secondary effects, foraging and resting, and potentially nesting, activities by the western yellow-billed cuckoo could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging, resting, and, potentially, nest defense behavior; cause migrating and, potentially, nesting adults to abandon habitat areas due to stress, and otherwise disrupt normal behavioral patterns; and, if the species were to nest on site, cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect habitat quality and the insect prey base for the western yellow-billed cuckoo, thus adversely affecting foraging behavior and potentially provisioning of young. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the western yellow-billed cuckoo. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include habitat fragmentation; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); invasive species such as giant reed and tamarisk and Argentine ants which could prey on nestlings if nesting occurred on site; cowbirds parasitism, if nesting occurred on site; increased noise; diminished water quality, affecting prey and nesting habitat quality; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites, if nesting occurred on site; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 314 acres of suitable habitat in the River Corridor SMA, and the small amount of habitat in the High Country SMA and Salt Creek area (approximately 8 acres), will provide western yellow-billed cuckoos with relatively undisturbed habitat for foraging and resting, and potentially nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of any nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect western yellow-billed cuckoos by allowing them to forage and rest, and potentially nest, without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Surveys will be conducted for cowbirds and trapping will be implemented if necessary.

Controls on Argentine ants will help reduce impacts on young in nests, if nesting occurred on site.

The specific mitigation measures for the western yellow-billed cuckoo are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-24 IMPACTS TO INDIVIDUALS – WESTERN YELLOW-BILLED CUCKOO (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of western yellow-billed cuckoo individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to western yellow-billed cuckoo individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing

and construction in the vicinity. If construction noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to western yellow-billed cuckoo individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-25 LOSS OF HABITAT – WESTERN YELLOW-BILLED CUCKOO

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the western yellow-billed cuckoo through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, which will preserve and enhance at least 314 acres of suitable habitat for western yellow-billed cuckoo (**Figure 4.5-12,** River Corridor SMA – Generalized Vegetation Communities and Land Covers).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the western yellow-billed cuckoo through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the western yellow-billed cuckoo would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-26 SECONDARY IMPACTS – WESTERN YELLOW-BILLED CUCKOO (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the western yellow-billed cuckoo associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such traffic noise, invasion by exotic plant species, abandonment of nests from human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for western yellow-billed cuckoo that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to avoid and minimize impacts to water quality and hydrology and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and

enhancement, and management, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Human and pet activity in the River Corridor SMA will be controlled through implementation of SP-4.6-17, which states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect western yellow-billed cuckoo foraging and resting habitat, and potentially breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to western yellow-billed cuckoo, including short-term construction-related dust, noise, ground vibration, and diminished water quality; and long-term impacts such as invasive species (including exotic plants, as well as cowbirds and Argentine ants, in nesting occurs on site); increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as indirect poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the western yellow-billed cuckoo during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for western yellow-billed cuckoo during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to western yellow-billed cuckoo by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 will improve long-term habitat quality for the western yellow-billed cuckoo and include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-55 requires replacement or enhancement of nesting and foraging habitat for western yellow-billed cuckoo. All permanent loss to nesting and foraging habitat shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss shall be mitigated at a 2:1 ratio. To replace the lost functions of habitat located adjacent to the Santa Clara River, all nesting and breeding habitat within the 60 dBA sound contour shall be considered degraded. Habitat within this area shall be mitigated at a ratio of 2:1.

BIO-63 and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impact to western yellow-billed cuckoo by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the western yellow-billed cuckoo would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

COASTAL CALIFORNIA GNATCATCHER (FT, CSC)

Life History

The coastal California gnatcatcher (*Polioptila californica californica*) (California gnatcatcher) occurs in coastal southern California and Baja California year-round, where it depends on a variety of arid scrub habitats. The California gnatcatcher occurs mainly on cismontane slopes (coastal side of the mountains) in southern California, ranging from Ventura and northern Los Angeles counties south through the Palos Verdes Peninsula to Orange, Riverside, San Bernardino, and San Diego counties. The species range continues south to El Rosario, Mexico (Dudek 2007B). Atwood (1990) reported that 99% of all coastal California gnatcatcher locality records occurred at or below an elevation of 984 feet AMSL. Since that time, data collected at higher elevations show that the species may occur as high as 3,000 feet AMSL, but that more than 99% of the known coastal California gnatcatcher locations occurred below 2,500 feet AMSL (65 FR 63680). Because of the natural topography of the southern California hills and mountain ranges, most of the higher-elevation locations are more inland, where population densities tend to be much lower than coastal populations.

The coastal California gnatcatcher typically occurs in or near sage scrub habitat which is composed of relatively low-growing, dry-season deciduous and succulent plants. Characteristic plants of this community include California sagebrush, various species of sage (*Salvia* spp.), California buckwheat, lemonadeberry, California encelia, and cactus. coastal California gnatcatchers also occur in chaparral, grassland, and riparian habitats where sage scrub is adjacent (Bontrager 1991). The use of these habitats appears to be most frequent during late summer, autumn, and winter, with smaller numbers of birds using such areas during the breeding season. The coastal California gnatcatcher tends to occur most frequently within the California sagebrush-dominated stands on mesas, gently sloping areas, and along the lower slopes of the Coast Ranges (Atwood 1990). The species occurs in high frequencies and densities in scrub communities with an open or broken canopy, whereas it is absent from scrub dominated by tall shrubs and occurs in low frequencies and densities in low scrub with a closed canopy (Weaver 1998).

Coastal California gnatcatchers glean insects and spiders from foliage of shrubs, primarily California buckwheat and coastal sage (Atwood 1993). Their diet is primarily composed of spiders but is also composed of wasps, bees, and ants (Burger *et al.* 1999). Coastal California gnatcatcher habitat use has been positively associated with total insect species richness and total individual insect abundance (County of Riverside 2008).

Coastal California gnatcatchers nests usually are located in a small shrub or cactus one to three feet above the ground. Territory size varies and is influenced by season and locale (Preston *et al.* 1998), but is unrelated to vegetation structure (Braden *et al.* 1997B). During the breeding season, territories in coastal areas are often smaller—averaging 5.7 acres (Atwood, Tsai *et al.*

1998)—than those in more inland regions, which average 8.4 acres (Braden *et al.* 1997B). Bailey and Mock (1998) observed juvenile dispersal distances averaging less than 1.9 miles from the nest territory and the longest documented juvenile dispersal is about 9.9 miles (Mock 2004). Based on an exponential dispersal model fitted to Rancho San Diego dispersal data, Bailey and Mock (1998) estimated that the coastal California gnatcatcher is capable of dispersing up to 13.5 miles.

Critical Habitat

On April 24, 2003, the USFWS published the Proposed Rule determining the critical habitat of the coastal California gnatcatcher on approximately 495,795 acres of land in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties (68 FR 20228). The Proposed Rule delineated lands as critical habitat into 13 critical habitat units, described each unit, and set forth the reasons for proposing the unit as critical habitat. Unit 13 encompassed approximately 103,290 acres in eastern Ventura and western Los Angeles counties, along the southern and eastern slopes of the Santa Susana Mountains and a portion of the interior foothills of the San Gabriel Mountains.

The Proposed Rule referenced only two areas of occupied gnatcatcher habitat in Unit 13, one area in Ventura County and the other in the foothills of the San Gabriel Mountains in Los Angeles County, approximately 14 miles apart, at opposite ends of Unit 13. The Proposed Rule acknowledged that Unit 13 is largely unoccupied by gnatcatchers and that the Unit's "primary function" is as a "regional source population" for the species and as "the east–west linkage" between the two known gnatcatcher locations in Ventura and Los Angeles counties (68 FR 20244).

On April 8, 2004, the USFWS published the notice of availability of the draft economic analysis for the proposed designation of critical habitat of the gnatcatcher (69 FR 18516). The draft economic analysis, dated February 24, 2004, was prepared for the USFWS by Economic & Planning Systems, Inc.

On December 19, 2007, the USFWS published the Revised Designation of Critical Habitat for the coastal California gnatcatcher (72 FR 72010–72213). The Revised Designation reduced the final critical habitat designation by 298,492 acres from the 2003 Proposed Rule. The Revised Designation included a re-evaluation of Unit 13, and the USFWS determined that the portions of the Santa Clarita Valley, including the Project area, are "not essential to the conservation of the coastal California gnatcatcher." (72 FR 72013). The USFWS determined that the excluded area does not have the spatial configuration and primary constituent elements essential to the conservation of the species.

Based on the Revised Designation, there is no current coastal California gnatcatcher critical habitat designation for the Project area, and, therefore critical habitat is not further addressed in the California gnatcatcher analysis in this EIS/EIR.

Recovery Plan

No recovery plan for the coastal California gnatcatcher has been published.

Threats

The coastal California gnatcatcher has declined due to widespread destruction of its coastal scrub habitat (Atwood 1990). It was estimated as early as the 1970s that up to 90% of coastal scrub has been lost as a result of development and land conversion (Westman 1981; Barbour and Major 1977), and coastal scrub is considered to be one of the most depleted habitat types in the United States (Kirkpatrick and Hutchinson 1977; Axelrod 1978; Klopatek *et al.* 1979, Westman 1987; O'Leary 1990). In addition, agricultural use, such as grazing and field crops, urbanization, air pollution, increases in fire frequency, and the introduction of exotics have all had an adverse impact on extant coastal scrub habitat. In particular, high fire frequencies and the lag period associated with recovery of the vegetation may significantly reduce the viability of affected subpopulations of the coastal California gnatcatcher (56 FR 47053-47060). Increased competition with introduced Mediterranean annual grasses may cause coastal scrub stand-thinning (Minnich and Dezzani 1998). Another significant threat to the coastal California gnatcatcher is the increased risk of predation, which is the most common cause of nest failures for the California gnatcatcher (Grishaver *et al.* 1998). Nest predators are numerous and especially include native snakes, but also urban-adapted birds such ravens and crows, mesopredators such as raccoons and opossums, ground squirrels, and coyotes (Grishaver *et al.* 1998). The coastal California gnatcatcher also may be parasitized by the brown-headed cowbird, although the cowbird's contribution to nest failure varies in different areas (Grishaver *et al.* 1998). Several other potential human- or development-related factors may affectcoastal California gnatcatchers. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include increased human activity; noise; lighting; pesticides, which may reduce prey and cause secondary poisoning; and predation and harassment by pet, stray, and feral cats and dogs.

Survey Results

Surveys for upland bird species were conducted throughout the Project site and in nearby areas between 1995 and 2008.

Breeding coastal California gnatcatchers have been documented off site to the east and southwest (**Figure 4.5-99**, California Gnatcatcher Observations and Habitat within the Greater Newhall Ranch Region). Two single observations of dispersing coastal California gnatcatchers were observed during 2007 and 2008 construction monitoring in the Project vicinity, as described further below. This species has not been observed within the Specific Plan, VCC or Entrada planning areas during USFWS protocol surveys. Focused surveys for the coastal California gnatcatcher were conducted in various areas of the Project site in 2000 (Guthrie 2000A, 2000B, 2000D) and 2004 (Guthrie 2004A, 2004B, 2004D, 2004E, 2004G). Dudek conducted USFWS protocol surveys within the Mission Village and Landmark Village proposed project sites in 2007 and 2008 (Priest 2007B; Lemons 2008). Compliance Biology conducted USFWS protocol surveys within the VCC planning area in 2008 (Compliance Biology 2008). Focused surveys have also been conducted off site in the Legacy Village area (Guthrie 2004C; Impact Sciences, Inc. 2000; SAIC 2003) and other adjacent off-site areas (Compliance Biology 2003B, 2006A; PCR 1998). Non-protocol avian surveys were conducted by Bloom Biological, Inc. in 2007 and 2008 (Bloom Biological, Inc. 2008).

Although focused surveys have not documented the coastal California gnatcatcher on site, it has been observed twice in the Project area during the course of biological monitoring. The first observation occurred during monitoring conducted in the VCC planning area when an individual coastal California gnatcatcher was observed on October 5, 2007 (**Figure 4.5-100**, California Gnatcatcher Observations and Habitat within the Immediate Newhall Ranch Area), by Dudek biologist Jeff Priest and biologist Ron Francis, a sub-consultant to Dave Crawford, Compliance Biology, Inc. (Priest 2007A). This observation occurred for approximately eight to 10 minutes within the VCC planning area in coastal scrub habitat located on the hills in the north-central portion of the site, on an easterly facing slope. Subsequent USFWS protocol surveys within the VCC planning area were negative in 2008 (Compliance Biology 2008). The second set of observations was made on August 8 and August 15, 2008, by Dudek biologist Traci Caddy (Ortega 2008), during monitoring for improvements of the Del Valle Training Center Road located south of the town of Val Verde off of Chiquito Canyon and east of the Del Valle Training Center (**Figure 4.5-100**). The August 8 observation occurred during the pre-construction nesting bird survey, with an individual observed for approximately five minutes in California sagebrush scrub before it flew west. The August 15 observation occurred during construction monitoring, with the individual observed for approximately five minutes in California sagebrush–California buckwheat scrub before it flew west. The coastal California gnatcatcher was not observed for the remaining three weeks of construction monitoring, which terminated September 15.

Given the relatively late time of year of the observations, the limited time period of the observations (*i.e.*, a single observation in 2007 and the one-week time period in 2008), and the fact that no other coastal California gnatcatchers have ever been observed in the Project area despite extensive focused and general surveys during the breeding season, these two sets of

observations are believed to be of dispersing or transient individuals, perhaps from isolated populations of coastal California gnatcatchers that have been periodically observed to the east of the Project site (**Figure 4.5-99**, California Gnatcatcher Observations and Habitat within the Greater Newhall Ranch Region). The Project area is within the known dispersal distances of this species from two off-site observations of the coastal California gnatcatcher: the Chivas Canyon location, 3.6 miles southwest of the Project area, and the Golden Valley location, 6.3 miles east of the Project area. Although the site appears to provide habitat for dispersal, it is unknown whether the site could support nesting populations of coastal California gnatcatcher. However, for the purpose of this analysis, it is assumed that the coastal California gnatcatcher could colonize and breed on site, although if this occurred, the breeding population probably would be small.

Suitable coastal scrub habitats on site to support dispersal and potential nesting for the coastal California gnatcatcher include California sagebrush scrub, California sagebrush scrub–undifferentiated chaparral, big sagebrush–California buckwheat, California sagebrush–*Artemisia californica*, California sagebrush–black sage, California sagebrush–California buckwheat scrub, and California sagebrush–purple sage (**Figure 4.5-101**, Scrub and Chaparral Wildlife Habitat). A total of 4,327 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 30 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 0.7% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 2.3 acres would be directly temporarily impacted.

The coastal California gnatcatcher has only been documented to use the Project area for dispersal, but it has the potential to colonize and breed on site in small numbers. If the coastal California gnatcatcher were to nest on site in areas subject to permanent or

tem0porary disturbances resulting from implementation of the RMDP, this permanent loss of habitat and temporary impacts would have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 1,487 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 34.4% of suitable habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

A large amount and percentage of suitable habitat for the coastal California gnatcatcher would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. If the coastal California gnatcatcher were to nest on site in areas subject to permanent habitat loss, this loss of habitat would have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,517 acres (35.1%).

A large amount and percentage of suitable habitat for the coastal California gnatcatcher would be permanently lost as a result of the combined direct and indirect impacts. If the coastal California gnatcatcher were to nest on site in areas subject to permanent habitat loss, this loss of habitat would have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of

the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Dispersing coastal California gnatcatchers have been documented in the Project vicinity on two separate occasions. Dispersing birds are highly mobile and therefore injury or mortality of these individuals is not expected to occur as a result of implementation of the RMDP and the SCP. Individuals could easily vacate areas subject to vegetation clearing and other construction/grading activities; however, their use of and distribution in the Project area during dispersal could be affected by construction activities. If the coastal California gnatcatcher were to colonize and nest in the Project area, vegetation clearing or grading during the nesting season could result in destruction of nests, eggs, or young, cause nest abandonment, or alter foraging behavior and provisioning of young, which could result in reduced survivorship and reduced reproductive success. Injury or mortality of individual birds, and specifically destruction of nest, eggs, or young; interference with foraging and provisioning of young; or nest abandonment; would have a substantial direct adverse effect on this species; (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals, but over a much larger area. Construction and/or grading activities may occur during the nesting season and could result in the destruction of nest, eggs, or young, interfere with foraging and provisioning of young, or cause nest abandonment. These impacts would have a substantial adverse impact on this species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the breeding season would have the potential to affect both dispersing and nesting coastal California gnatcatcher adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime lighting. Dust could degrade habitat quality, noise and ground vibration could affect nesting and foraging behavior, and nighttime lighting could induce physiological stress and increase predation by nocturnal

predators. Potential long-term development-related secondary impacts include habitat fragmentation; habitat degradation from frequent wildfires; increased human activity; nighttime illumination; potential harassment by humans and pet, stray, and feral cats and dogs and other mesopredators; loss of food sources and secondary poisoning from pesticides; and predation of nestlings by Argentine ants along the open space–development interface.

These short-term and long-term secondary impacts would permanently reduce the number of coastal California gnatcatchers that may occur along the urban–open space edge, interfere with the movement of the species between habitat areas due to fragmentation, and contribute to the reduction of the range and distribution of the coastal California gnatcatcher in the Project area (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the coastal California gnatcatcher (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 28 acres (0.6%) of permanent loss and 4.5 acres of temporary loss;
- Alternative 4 – 28 acres (0.7%) of permanent loss and 2.0 acres of temporary loss;
- Alternative 5 – 32 acres (0.7%) of permanent loss and 6.0 acres of temporary loss;
- Alternative 6 – 28 acres (0.6%) of permanent loss and 7.6 acres of temporary loss; and
- Alternative 7 – 19 acres (0.4%) of permanent loss and 13 acres of temporary loss.

Compared to Alternative 2, which would result in 30 acres (0.7%) of permanent habitat loss and 2.3 acres of temporary impacts, the permanent loss of habitat would not be substantially different under Alternatives 3, 4, 5, and 6 and would be somewhat less under Alternative 7. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternatives 3, 4, 5, and 6 and would be marginally greater under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in fewer permanent impacts and more temporary impacts to suitable habitat for the coastal California gnatcatcher compared to the other alternatives.

Although the overall loss of habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude to the overall habitat loss under Alternative 2, if the coastal California gnatcatcher were to nest on site, these impacts would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the coastal California gnatcatcher (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 1,408 acres (32.5%) of permanent loss;
- Alternative 4 – 1,368 acres (31.6%) of permanent loss;
- Alternative 5 – 1,316 acres (30.4%) of permanent loss;
- Alternative 6 – 1,088 acres (25.1%) of permanent loss; and
- Alternative 7 – 1,007 acres (23.3%) of permanent loss.

Compared to Alternative 2, which would result in 1,487 acres (34.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the coastal California gnatcatcher compared to the other alternatives.

Although the permanent habitat loss under Alternatives 3 through 7 would be less than the habitat loss under Alternative 2, a large amount and percentage of suitable habitat for the coastal California gnatcatcher would still be permanently lost as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under these alternatives. If the coastal California gnatcatcher were to nest on site, this indirect permanent loss of habitat under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and

Entrada planning areas would result in the following combined direct and indirect permanent impacts to suitable habitat for the coastal California gnatcatcher:

- Alternative 3 – 1,436 acres (33.2%) of permanent loss;
- Alternative 4 – 1,396 acres (32.3%) of permanent loss;
- Alternative 5 – 1,349 acres (31.2%) of permanent loss;
- Alternative 6 – 1,116 acres (25.8%) of permanent loss; and
- Alternative 7 – 1,026 acres (23.7%) of permanent loss.

Compared to Alternative 2, which would result in 1,517 acres (35.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the coastal California gnatcatcher compared to the other alternatives.

Although the combined permanent habitat loss under Alternatives 3 through 7 would be less than the habitat loss under Alternative 2, a large amount and percentage of suitable habitat for the coastal California gnatcatcher would still be permanently lost as a result of implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under these alternatives. If the coastal California gnatcatcher were to nest on site, this combined permanent loss of habitat under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential impacts to coastal California gnatcatcher individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Individuals could be displaced from occupied habitat by construction activities, and construction occurring during the nesting season could result in the destruction of nest, eggs, or young, interfere with foraging and provisioning of young, or cause nest abandonment, if the species were to colonize and nest on site. These impacts to individual coastal California gnatcatchers occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative

3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination, that could cause habitat degradation, disrupt nesting and foraging activities, and abandonment of nests, if the coastal California gnatcatcher were to colonize and nest on site. Potential long-term secondary impacts include habitat fragmentation, habitat degradation due to wildfire, increased human activity, nighttime illumination, increased predation, and secondary poisoning, as described above for Alternative 2. These secondary impacts would permanently reduce coastal California gnatcatcher populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to coastal California gnatcatcher: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and habitat outside the Project footprint.

The coastal California gnatcatcher currently is only known to use the Project area during dispersal. However, it has the potential to colonize and nest on site, although breeding population probably would be small. While dispersing adults and juveniles are mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from occupied habitat by construction activities. If the coastal California gnatcatcher were to colonize and nest on site, impacts to individuals also could occur if active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young, or interfere with foraging or provisioning of young. Construction activities may also cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities. This species is highly detectable and territorial, and its presence is easily documented if it occurs as a breeding resident.

The combined permanent loss of suitable habitat for the coastal California gnatcatcher resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,026 acres (23.7%) under Alternative 7 to 1,517 acres (35.1%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area, both during dispersal and potentially for nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the coastal California gnatcatcher in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 1,936 acres of suitable habitat for the coastal California gnatcatcher in the High Country SMA and the Salt Creek area (**Figure 4.5-3**). If coastal California gnatcatcher is documented as a breeding resident, occupied habitat will be mitigated at a ratio of 3:1.

With regard to secondary effects, foraging and potential nesting activities by the coastal California gnatcatcher could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate territories and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests, are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; wildfire; increased human activity; lighting; pesticides, which may cause secondary poisoning and loss of food resources; harassment by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants that may prey on nestlings. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 1,936 acres of suitable habitat in the High Country SMA and Salt Creek area will provide coastal California gnatcatchers with relatively undisturbed habitat. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect coastal California gnatcatchers by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning and loss of food sources.

The specific mitigation measures for the coastal California gnatcatcher are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-27 IMPACTS TO INDIVIDUALS – COASTAL CALIFORNIA GNATCATCHER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate impacts to coastal California gnatcatcher individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to coastal California gnatcatcher individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, clearing and construction in the vicinity shall be postponed at the discretion of the biologist, until the nest is vacated.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to coastal California gnatcatcher individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-28 LOSS OF HABITAT – COASTAL CALIFORNIA GNATCATCHER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for coastal California gnatcatcher through habitat protection, restoration and enhancement, and management.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The High Country SMA will protect and manage at least 1,307 acres of suitable habitat for coastal California gnatcatcher.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measure to mitigate for the loss of habitat for coastal California gnatcatcher through habitat protection, restoration and enhancement, and management.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The Salt Creek area includes 629 acres of suitable habitat for the coastal California gnatcatcher.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-55 will be implemented to mitigate for loss of documented occupied nesting habitat for coastal California gnatcatcher. If the coastal California gnatcatcher is identified nesting on site, the applicant will acquire or preserve nesting coastal California gnatcatcher habitat at a 3:1 ratio for impacts to documented occupied habitat, or by the ratio specified in BIO-2, which ever is greater. Mitigation acquisition shall occur at an agreed-upon location as approved by the USFWS upon consultation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the California gnatcatcher would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-29 SECONDARY IMPACTS – COASTAL CALIFORNIA GNATCATCHER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as habitat fragmentation, increased human activity, inadvertent impacts to habitat during construction, and nighttime lighting.

SP-4.6-36 through SP-4.6-42, as described above, refer to habitat protection and management in the High Country SMA that will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the High Country SMA. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within the High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to biological resources outside the grading area in the High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to California gnatcatcher, including short-term construction-related dust, noise, ground vibration and increased human activity as well as long-term habitat fragmentation, increased human activity, greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators, as well as Argentine ants, and loss of food sources and secondary poisoning from pesticide use.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-19 through BIO-21, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used

within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to California gnatcatcher by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the California gnatcatcher would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

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RINGTAIL CAT (CFP)

Life History

The ringtail cat (*Bassariscus astutus*) (ringtail) is a California Fully Protected species that occurs throughout the southwestern United States and south into Baja California and the provinces of Guerrero, Oaxaca, and Veracruz of mainland Mexico (Hall 1981). It occurs in all of Arizona and Texas, and virtually all of New Mexico and Oklahoma (Hall 1981). It also occurs in southwestern Oregon, the southern and eastern portions of Nevada, the western and eastern portions of Utah, the southwest corner of Wyoming, the western and central portions of Colorado, south-central Kansas, southwestern Missouri, and northern Louisiana (Hall 1981). The ringtail occurs throughout much of California, absent only in the San Joaquin Valley and the extreme northwestern corner of the state (Hall 1981; Zeiner *et al.* 1990B). There is relatively little information for the current status of the ringtail in California. Belluomini (1980) conducted a review of the ringtail in California based on sighting records, museum specimens, and the current scientific literature, resulting in 446 occurrence records in 49 counties in California, and the species was only absent from Modoc Plateau, Antelope Valley, and portions of the San Joaquin Valley. Abundances were highest along riparian areas in northern California and scarcest in the Mojave and Colorado deserts, the east slope of the Sierra Nevada, the San Joaquin Valley, and northeastern California (Belluomini 1980). There are two clusters of records for ringtail in Los Angeles County: two occurrences in the Santa Monica Mountains and three occurrences on the southern flank of the San Gabriel Mountains (Belluomini 1980).

Suitable habitat for ringtails consists of broken semi-arid country with a mixture of hardwood forest and shrubland in close association with rocky areas or riparian habitats (Poglayen-Neuwall and Toweill 1988; Zeiner *et al.* 1990B). Ringtails typically occur at elevations ranging from sea level to 4,590 feet (1,400 meters) AMSL, but may occur at elevations ranging from 6,560 feet to 9,514 feet (2,000 to 2,900 meters) AMSL (Poglayen-Neuwall and Toweill 1988). Their primary habitat is oak, pinyon pine, and juniper woodlands, but they also occur in conifer forests, chaparral, desert, and dry tropical habitats as long as rocky outcroppings, canyons, boulder piles, or talus slopes are present (Poglayen-Neuwall and Toweill 1988). Ringtails are dependent on open water and usually do not occur more than 0.6 mile (one kilometer) from a permanent water source (Zeiner *et al.* 1990B). Ringtails are generally uncommon and distributed sporadically, and occur in varying population densities where they do occur. In two California locales, densities ranged from 10.5 to 20.5 ringtails per square kilometer in the northern Central Valley, and from 0.08 to 2.3 ringtails per square kilometer in chaparral in a Pacific drainage of the Sierra Nevada (Poglayen-Neuwall and Toweill 1988).

Ringtails are primarily nocturnal but also exhibit crepuscular activity (at dawn and dusk) (Kavanau 1971). They are omnivorous, but primarily eat rodents, rabbits, hares, carrion, and arthropods, but also small birds, snakes, frogs, and fish (Poglayen-Neuwall and Toweill 1988).

The birth of one to four offspring typically occurs in May and June (Poglayen-Neuwall and Toweill 1988). Young develop rapidly and attain adult size by 30 weeks (Poglayen-Neuwall and Toweill 1988).

Ringtail home ranges are widely variable and are related to sex and habitat factors (Poglayen-Neuwall and Toweill 1988). Ringtail home ranges have been estimated to vary from as small as 12 acres (five hectares) in a riparian habitat to as large as 336 acres (136 hectares) (Poglayen-Neuwall and Toweill 1988).

Other than habitat loss and fragmentation, which is probably the greatest threat to the southern California ringtail populations, no other specific threats related to development have been identified for this species. However, a potential threat related to habitat loss and fragmentation is a decline in coyotes in fragmented habitats, resulting in the "mesopredator release" effect (Crooks and Soulé 1999), including raccoons and foxes that are potential predators on ringtails (Zeiner *et al.* 1990B). An increase in raccoons also could increase competition for food. Other development-related potential threats are nighttime lighting, which could make ringtails more vulnerable to nocturnal predators such as owls, raccoons, and foxes, and disturbance due to increased human activity within or in proximity to ringtail habitat (*e.g.*, increased stress, harassment, disturbance of dens, trampling of vegetation, off-road vehicles); pet, stray, and feral cats and dogs; and rodenticides that could reduce the rodent prey of ringtails.

Survey Results

The ringtail has not been observed in the Project area. Impact Sciences (2005) conducted track/scent station monitoring for mammals, with negative results for the ringtail. This species also has never been observed in the numerous wildlife surveys conducted in the Specific Plan area, including recent wildlife surveys conducted by Dudek (Dudek and Associates 2006B, 2006C, 2006D, 2006E). Although their survey results were negative, Impact Sciences concluded that the species has a moderate potential to occur on site in dense woodland or riparian areas. The nearest recent occurrence of ringtail is a 2007 observation in Elderberry Canyon approximately 0.5 mile above Castaic Dam in a narrow rocky canyon (Huntley 2009). The Belluomini (1980) review included two recorded occurrence areas in Los Angeles County: the Santa Monica Mountains and the southern flank of the San Gabriel Mountains. If the ringtail does occur on site, it likely occurs in very low densities. The area with the highest potential to support the species is the Santa Clara River corridor because of the presence of open water and riparian habitats. The potential for the ringtail to occur in the proposed upland development areas is considered to be very low because of a general lack of suitable riparian and open water habitat. Within upland areas on site, it has greater potential to occur in canyons and/or wooded areas of the High Country SMA. Vegetation communities on site considered to be suitable habitat for the ringtail are southern coast live oak riparian forest, southern cottonwood–willow

riparian, southern willow scrub, coast live oak woodland, valley oak woodland, and mixed oak woodland. A total of 1,451 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (NO ACTION/NO PROJECT)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 48 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.3% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 46 acres would be temporarily impacted.

This species has not been observed during the numerous surveys along the River corridor or elsewhere in the Project area. If ringtails were present, even a small permanent loss of occupied habitat and temporary impacts as a result of construction and/or grading activities could remove a den area and would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 73 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 5.0% of these communities on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat).

This species has not been observed during the numerous surveys along the River corridor and it is considered to have a low potential to occur in the Project area due to a general lack of suitable habitat. If ringtails were present, however, because of its rarity even the relatively small amount and percentage of suitable habitat for the ringtail that would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 120 acres (8.3%). Although this species has a low probability of occurring in the Project area, if ringtails were present, because of its rarity the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on ringtail on site; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

If the ringtail were present in the proposed Project construction zone, absent mitigation, construction and/or grading activities related to RMDP facilities could result in injury or mortality of any individuals occupying this habitat. The primary risk would be to young in a den as a result of vegetation clearing, where individuals may be injured or killed by direct contact with construction equipment or be flushed from dens and exposed to increased predation and vehicle collisions. Flushed individuals, including adults and young, may become disoriented and unable to find safe refuge, resulting in an increased risk of mortality. Implementation of the SCP would not directly impact this species. Although a relatively small amount of habitat would be removed and the potential for impacts to individuals is considered to be very low, the loss of any ringtails occupying this habitat as a result of construction and/or grading activities would have a substantial

adverse effect on a special-status species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent impacts to individuals. The loss of any ringtails occupying this habitat as a result of construction and/or grading activities would have a substantial adverse effect on a special-status species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect any ringtails in areas adjacent to construction zones. These impacts could include disruptions of essential behavioral activities (*e.g.*, foraging, breeding, and/or rearing of young) due to increased human activity, noise, and nighttime illumination, the latter of which may disrupt the species' nocturnal behavior and make them more vulnerable to predation by nocturnal predators, such as owls, raccoons, and foxes. As noted above, individuals flushed from dens during construction may become disoriented and unable to find safe refuge, thus increasing their risk of mortality. Implementation of the SCP would not affect this species.

Potential long-term development-related secondary impacts associated with use of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas include disruption of nocturnal activities; increased human activities within and in proximity to suitable habitat (*e.g.*, increased stress, harassment, trampling of vegetation, and/or off-road vehicles); greater vulnerability to predation by nocturnal predators as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs within about 200 feet of the urban–open space edge (CBI 2000) as well as other nocturnal mesopredators, such as owl, raccoon, and fox (Crooks and Soulé 1999); increased competition for food resources with raccoons; and loss of rodent prey as a result of rodenticides that may be used to control pest rodents (*e.g.*, ground squirrels in landscaped areas or golf courses). These secondary impacts could permanently affect ringtails that may occur in proximity to the urban–open space edge and thus have a substantial adverse effect on a special-status species (significance criterion 1). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the ringtail (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 34 acres (2.4%) of permanent loss and 45 acres of temporary loss;
- Alternative 4 – 35 acres (2.4%) of permanent loss and 43 acres of temporary loss;
- Alternative 5 – 44 acres (3.0%) of permanent loss and 48 acres of temporary loss;
- Alternative 6 – 34 acres (2.3%) of permanent loss and 44 acres of temporary loss; and
- Alternative 7 – 13 acres (0.9%) of permanent loss and 37 acres of temporary loss.

Compared to Alternative 2, which would result in 48 acres (3.3%) of permanent loss and 46 acres of temporary impacts, the permanent and temporary loss of habitat under Alternatives 3, 4, and 6 would be somewhat less overall. Compared to Alternative 2, the permanent loss of habitat under Alternative 5 and the temporary loss of habitat under Alternatives 3 through 6 would not be substantially different. The substantial difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in reduced permanent impacts to suitable habitat for the ringtail compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, and because, if present, any loss of suitable habitat would have an adverse effect on this species, direct impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the ringtail (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 62 acres (4.3%) of permanent loss;
- Alternative 4 – 57 acres (3.9%) of permanent loss;
- Alternative 5 – 57 acres (3.9%) of permanent loss;
- Alternative 6 – 32 acres (2.2%) of permanent loss; and
- Alternative 7 – 34 acres (2.3%) of permanent loss.

Compared to Alternative 2, which would result in 73 acres (5.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 and 5 would be somewhat reduced and Alternatives 6 and 7 substantially reduced compared to Alternative 3.

Even though the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than the overall habitat loss under Alternative 2, if present, any loss of suitable habitat would have an adverse effect on this species. Indirect impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the ringtail:

- Alternative 3 – 96 acres (6.6%) of permanent loss;
- Alternative 4 – 92 acres (6.3%) of permanent loss;
- Alternative 5 – 101 acres (7.0%) of permanent loss;
- Alternative 6 – 65 acres (4.5%) of permanent loss; and
- Alternative 7 – 47 acres (3.2%) of permanent loss.

Compared to Alternative 2, which would result in 120 acres (8.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. However, if present, any loss of suitable habitat would have an adverse effect on this species. Therefore, the combined direct and indirect permanent loss of suitable habitat for the ringtail occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual ringtails as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Therefore, impacts to individual ringtails occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity, habitat fragmentation, increased risk of predation, and nighttime lighting. Therefore, the loss or degradation of suitable habitat and impacts to individual ringtails due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to the ringtail cat: (1) impacts to individuals; (3) loss of habitat; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of increased human activity, noise, and lighting. If individuals, including adults and young, are flushed from dens during construction they may become disoriented and unable to find safe refuge, resulting in increased risk of mortality from predation or vehicle collisions. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for ringtail in suitable habitat in and within 300 feet of the construction zone. If the species is observed in the breeding and rearing period, no construction-related activities shall occur within 300 feet until it has been determined that construction activities would not adversely affect the rearing of young. Biological monitoring will also be conducted during initial vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the ringtail cat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3

only), and Entrada planning areas would range from 47 acres (3.2%) under Alternative 7 to 120 acres (8.3%) under Alternative 2. Because the species is typically associated with areas of dense vegetative cover, rocky areas, and/or steep canyons with nearby permanent water, most of this suitable habitat probably would not support the entire life cycle of the species, but could be used for movement and dispersal. If the species were present, because of its rarity, this would be substantial loss of suitable habitat for this species and probably would alter its use of the Project area. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide potential habitat to for the ringtail cat in the Project vicinity, although only a small portion may be suitable for permanent occupation and support of breeding, such as more remote canyons in the High Country SMA. Implementation of these mitigation measures will result in protection and management of approximately 1,170 acres of potential habitat for the ringtail cat in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, ringtails occupying habitat in close proximity to construction activities could be adversely affected during construction due to increased human activity, noise, and lighting, which could affect their essential activities such as foraging, breeding, and caring for young. Individuals, including adults and young, could be flushed from dens, resulting in disorientation and increased exposure to predators and vehicle collisions. The pre-construction surveys described above will avoid and minimize these potential short-term impacts. Potential long-term effects of development include habitat fragmentation effects, including increased mesopredators; increased human activity; pet, stray, and feral cats and dogs; and use of rodenticides, which may cause secondary poisoning or affect their rodent prey base. The primary mitigation for these long-term effects is the preservation of a large open space system that will provide foraging habitat to support the ringtail in the Project vicinity, and in particular the High Country SMA, which has the greatest potential to support the ringtail. Implementation of Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in protection and management of approximately 1,170 acres of suitable habitat for the ringtail. This habitat will be conserved within three main interconnected open space areas totaling approximately 6,300 acres: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Pesticides, including rodenticides, will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site, if present, after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for the ringtail cat are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-30 IMPACTS TO INDIVIDUALS – RINGTAIL CAT

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will help avoid impacts to ringtail individuals through pre-development surveys.

SP-4.6-53 states that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present. Each of these surveys shall be conducted in accordance with consultation requirements set forth in SP-4.6-59, described below, and documented in a separate report. Based on the results of the surveys, additional conditions and mitigation measures may be required.

SP-4.6-59 states that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance and further mitigation activities. Based on the results of the consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to avoid impacts to ringtail individuals through pre-construction coordination and ringtail surveys.

BIO-52 requires that prior to grading and construction activities, a qualified biologist attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractors describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-83 requires a pre-construction survey for ringtail 30 days prior to construction activities. The survey area shall include suitable riparian and woodland habitat within the construction disturbance zone and a 300-foot buffer around the construction site. Should the ringtail be observed in the breeding and rearing period, no construction-related activities shall occur within 300 feet until it has been determined that the ringtail is no longer be present and/or that

construction activities would not adversely affect the rearing of young. Should the ringtail be observed outside the breeding and rearing period, denning ringtail shall be safely evicted by a qualified biologist (as determined by a Memorandum of Understanding with CDFG). All activities that involve the ringtail shall be documented and reported to CDFG.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, through ongoing surveys and avoidance, impacts to ringtail individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7. Because the ringtail is a California Fully Protected species, no injury or mortality of individuals would occur as a direct result of construction activities.

IMPACT 4.5-31 LOSS OF HABITAT – RINGTAIL CAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will help mitigate the loss of habitat for ringtail cat through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and

enhance at least 330 acres of potential habitat for ringtail cat. The High Country SMA will preserve and enhance 572 acres of potential habitat for ringtail cat.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for ringtail cat through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat shall be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the ringtail cat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-32 SECONDARY IMPACTS – RINGTAIL CAT

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will help reduce potential secondary impacts to the ringtail, including increased human activity, habitat fragmentation, increased incidence of vehicle collisions, and nighttime lighting.

Several of the mitigation measures relate to habitat protection, restoration and enhancement, and management of the large open space system that will provide habitat for the ringtail in perpetuity.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Several other mitigation measures address increased human activity, including pets, and edge effects, such as nighttime lighting in proximity to suitable ringtail habitat.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where

feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side of bank stabilization and development.

SP-4.6-17 and SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the River Corridor SMA and High Country SMA.

SP-4.6-56 requires that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce short-term and long-term secondary impacts to ringtail, including construction-related activities, increased human activities, harassment and predation by pet, stray, and feral cats and dogs, and the use of pesticides (including rodenticides).

BIO-52 and BIO-83, as described above, address potential secondary impacts during construction by requiring a qualified biologist to monitor construction activities (BIO-52) and pre-construction surveys for the ringtail and a 300-foot buffer between construction zones and areas supporting ringtail breeding and rearing (BIO-83).

BIO-1 through BIO-16 are related to habitat protection, restoration and enhancement, and management to offset increased human activity. These measures include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. In addition, BIO-19 describes the dedication of 1,518 acres in the Salt Creek area, which includes 269 acres of suitable habitat for the ringtail.

BIO-63 requires as-needed control of stray and feral cats and dogs in open space areas. All pets must be on leash in any areas within or adjacent to open space areas.

BIO-64 describes the preparation of an integrated pest management (IPM) plan that addresses the use of pesticides, including rodenticides and insecticides, in areas in proximity to potential ringtail habitat and thus reduces the potential impact of rodenticides on prey taken by ringtails.

BIO-73 requires permanent fencing to be installed along all trails that pass through the River Corridor SMA. This measure will minimize impacts to protected vegetation communities and special-status wildlife species that may occur due to increased use of open space areas by humans and domestic animals.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to ringtails and their habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

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UNDESCRIBED SNAIL SPECIES (NO CURRENT STATUS)

Life History

In 2006, an undescribed species of snail (*Pyrgulopsis* sp. *nova*) was observed on the Project site within portions of the Middle Canyon Spring. A specimen was collected and sent to the Smithsonian Institute in Washington, D.C., for identification and was determined to be an unidentified species of spring snail. The undescribed snail belongs to the genus *Pyrgulopsis* (Hershler 2007), which belongs to the Hydrobiidae (spring snail) family (Liu and Hershler 2007).

Little is known about the snail's life history and it has not been fully described taxonomically. In addition, the snail's habitat requirements are unknown and a comprehensive distribution survey has not yet been attempted. Snails in the family Hydrobiidae are aquatic obligates in each phase of their life history (adults, eggs, larvae), have limited vagility (*i.e.*, free movement), and are presumably incapable of dispersing on their own across terrestrial barriers among hydrographically isolated habitats (Liu and Hershler 2007). Therefore, snails belonging to the family remain very localized in their distribution (Monthey 1998). While not well understood, the dispersal of the undescribed snail may occur from a variety of mechanisms, including flood or mechanical transport by wildlife. Hydrobiids are not currently known to disperse widely and known populations remain very isolated. .

Hydrobiids are prone to differentiation on a fine geographic scale, with most species being restricted to a single spring, spring complex, or local watershed (Liu and Hershler 2007). Typically, these snails are dioecious (*i.e.*, constitute separate genders) and semelparous (*i.e.*, breed once in their lifetime and then die). Individuals have a lifespan of one year, with 90% or more of the population turning over annually. Eggs are laid in the spring and hatch in two to four weeks.

On the Project site, the undescribed snails have been historically observed within the groundwater-fed spring in swiftly flowing, clear to low-turbidity, shallow water (one-half to six centimeters deep), on a sandy to silty substrate embedded with some coarse materials. The spring core area is fed by several springheads and occupies an area approximately 400 feet by 400 feet, and supports southern cottonwood–willow riparian forest. However, vegetation components and strata vary among areas of the spring.

In addition to the direct loss of habitat, these undescribed snails would be vulnerable to changes in hydrologic conditions. The spring is supported by groundwater; therefore, any changes to aquifer hydrology could adversely affect water quantity and quality at the spring. Modifications to water quantity or quality in the spring or flow speed of water through the spring could result in multiple negative secondary effects, including elevated water temperatures, lower dissolved oxygen availability, and the accumulation of fine sediments which could smother preferred

substrates and impair egg-laying or survivorship of eggs or young (Cordeiro 2002). Because 90% of the population turns over annually, any condition that impairs egg-laying or survivorship of eggs or young (*e.g.*, excessive smothering sedimentation) may result in extirpation (Furnish and Monthey 1998). Additionally, disturbances associated with increased human presence could adversely affect the species and its habitat. Specifically, unauthorized entry into the spring could degrade the quality of the habitat and result in the trampling of individual snails. Furthermore, increased predation from non-native animals and the spread of non-native, invasive plant species into the spring would also threaten the snail population. Proposed development could remove native vegetation upslope, increase runoff from roads and other paved surfaces, and result in an increase in ornamental landscaping and lawns, all of which ultimately lead to increased irrigation. Non-native plant species have also been found to invade native riparian vegetation communities and to become established after trampling or following periods of drought. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of native species such as the undescribed snail.

Survey Results

Comprehensive surveys for the undescribed snail species have not been completed on the Project site to date. However, reconnaissance level surveys were conducted in February 2009 in all flowing drainages within the proposed RMDP Project area, except for upper Ayers Canyon, which would not be subject to project disturbance. This species was not detected during the February 2009 surveys and is only known to occur in the Middle Canyon Spring complex (Swift 2009). The species was first observed within Middle Canyon Spring by USFWS biologists in 2006. In 2007, Dudek biologists observed over 100 snails (these snails were not identified to genus or species, and it is not known whether they were the undescribed snail or another freshwater snail) in Middle Canyon Spring and the lower-most reach of the Middle Canyon drainage, and immediately below the river terrace where the spring discharges into the upper river floodplain. At the time the unidentified snails were observed in the mouth of the Middle Canyon drainage (non-spring area), agricultural runoff from irrigated fields in the lower valley of Middle Canyon supported flow in the lower portion of the drainage (Dudek 2007C).

In order to study and establish the natural baseline conditions hydrology of the spring for the purpose of future management, agricultural irrigation activities were terminated in September 2007. Cessation of irrigation resulted in a return to ephemeral hydrologic conditions in the lower drainage but had nearly undetectable affect in water levels and source groundwater to the spring. In 2008, the undescribed snails were abundant within the Middle Canyon Spring and small outlet channels downslope of Middle Canyon Spring (GSI 2008). Currently no snails occur in the lower Middle Canyon drainage due to the absence of irrigation runoff but remain present in the Middle Canyon Spring (Carpenter and Harpole 2008).

Middle Canyon Spring is a natural hydrologic feature that appears to have been present for many years. The adjacent Middle Canyon drainage is ephemeral, but periodically has supported perennial flow in lower portions of the drainage as a result of agricultural runoff. The upstream irrigation may have temporarily augmented the suitable habitat at the Middle Canyon Spring by supplying surface water in the lower-most reach of the Middle Canyon drainage. If the unidentified snails observed in 2007 within the Middle Canyon drainage were the undescribed snails, the undescribed snails may have dispersed from the natural spring area after agricultural runoff began running in the lower-most portion of the Middle Canyon drainage. The Middle Canyon Spring and the Middle Canyon drainage have no direct hydrologic connection, though both have periodic connectivity with the Santa Clara River during very high flows. If the undescribed snails did disperse into the lower-most portion of the Middle Canyon drainage, it is unknown whether the undescribed snails dispersed *via* the Santa Clara River or whether they were transported to the lower-most portion of the Middle Canyon drainage *via* wildlife, livestock, or anthropogenic action. The locations on the Project site where the undescribed snails have been observed are shown on **Figure 4.5-23**, Middle Canyon Spring – Vicinity Map, and **Figure 4.5-24**, Middle Canyon Spring – Existing Conditions.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in direct permanent impacts to the Middle Canyon drainage but not to Middle Canyon Spring, where this species occurs. A span bridge, abutment, and flood control modification within the Middle Canyon drainage would be installed as part of the RMDP, resulting in direct permanent loss of and temporary impacts to formerly occupied area in the lower Middle Canyon drainage. Middle Canyon Spring, currently the only known occurrence of the undescribed snail species, would not be directly impacted by implementation of the proposed RMDP. The spring itself would not be directly disturbed by construction activities during the implementation of the RMDP because it is within a portion of the River Corridor SMA

that would not be directly affected by bank stabilization or bridge construction to the north of the spring. No impacts to this species would occur through implementation of the SCP.

Implementation of the RMDP and SCP would not result in the loss of habitat and would not have a substantial direct adverse effect on the known population of the undescribed snail species; impede the use of native wildlife nursery sites; have the potential to substantially reduce the known occupied habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would not be significant because no impacts would occur.

Indirect Permanent Impacts

The build-out of the Specific Plan, VCC, and Entrada planning areas would not result in habitat impacts within the Middle Canyon Spring complex. Populations of the undescribed snail species and associated habitat are not expected to occur in areas to be disturbed by the build-out of the Specific Plan, VCC, and Entrada planning areas, because the species has only been detected in the Middle Canyon Spring complex, and reconnaissance level surveys of all drainages supporting permanent surface water have not detected this species. Therefore, the loss of habitat associated with build-out of these areas would not have a substantial adverse effect on the species; impede the use of native wildlife nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would not be significant because impacts are not expected to occur.

Combined Direct and Indirect Permanent Impacts

Implementation of the RMDP and the SCP would not affect this species. The build-out of the Specific Plan, VCC, and Entrada planning areas would not result in indirect permanent impacts to the Middle Canyon Spring complex; therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would not be significant, because impacts are not expected to occur.

Impacts to Individuals

Because the undescribed snail species is only known to occur within Middle Canyon Spring, which is being preserved, implementation of the RMDP would not result in the direct loss of individuals of the species, nor would it have a substantial direct adverse effect on the known population of the species; impede the use of native wildlife nursery sites; have the potential to substantially reduce the known occupied habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would not be significant because no impacts are not expected to occur.

Build-out of the Specific Plan area would not impact individual undescribed snails within the Specific Plan area. This species has only been detected in the Middle Canyon Spring complex, and reconnaissance level surveys of all drainages supporting permanent surface water have not detected this species; therefore, build-out of the VCC and Entrada planning areas is not anticipated to impact any individual snails. Because no impacts to individuals would occur, the build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on the species; impede the use of native wildlife nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Secondary Impacts

Construction activities associated with the RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect the undescribed snail in areas adjacent to construction zones. RMDP facilities (road with bridge abutments and flood control features) would be constructed within the Middle Canyon drainage. Secondary impacts associated with this construction include impacts to hydrology and water quality. Implementation of the SCP would not result in secondary impacts to this species.

Construction activities associated with the Specific Plan and the future occupancy of the Specific Plan area also could result in short-term secondary impacts, such as exposure to fugitive dust, contact with chemical pollutants, human intrusion into Middle Canyon Spring, and alterations to the hydrologic or biogeochemical properties of the spring. Potential long-term secondary impacts associated with build-out of the Specific Plan area include the introduction of non-native, invasive plant and animal species, intrusion into the spring by humans and domestic animals, light from Commerce Center Drive Bridge, light and vibration from vehicles, and hydrologic and/or biogeochemical changes. GSI (2008) concluded that, based on an evaluation

of current hydrogeologic conditions and modeled post-development conditions, the future spring hydrology and water quality would not be substantially altered; however, for purposes of this analysis minor hydrologic changes (increase or decrease in groundwater supply to the spring) were considered as a potential impact. The potential loss of the undescribed snail species as a result of these short-term and long-term secondary impacts would constitute a substantial adverse effect on the species; would impede the use of native wildlife nursery sites; and could substantially reduce the number and restrict the range of the species (significance criteria 1, 4, and 7). Both short-term and long-term secondary impacts (Impacts to Individuals) would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

No direct permanent loss of or temporary impacts to the Middle Canyon Spring complex would occur under Alternatives 3 through 7. Because the implementation of the RMDP under Alternatives 3 through 7 would avoid impacts to the Middle Canyon Spring complex and is generally similar to the overall habitat loss under Alternative 2, the direct permanent and temporary impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant, because no impacts are expected to occur.

No direct permanent or temporary impacts would occur to the Middle Canyon Spring complex as a result of implementation of the SCP under Alternatives 3 through 7.

Indirect Permanent Impacts

As with Alternative 2, build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not result in permanent impact to the Middle Canyon Spring complex. The indirect permanent impacts (Loss of Habitat) associated with Alternatives 3 through 7 would not be significant because impacts are not expected to occur.

Combined Direct and Indirect Permanent Impacts

Similar to Alternative 2, no impacts to habitat for the undescribed snail would occur through implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through and 7.

Impacts to Individuals

Under Alternatives 3 through 7, no loss of individual undescribed snails in Middle Canyon Spring would occur as a result of implementation of the RMDP and the SCP or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. The loss of individuals resulting from implementation of Alternatives 3 through 7 would not be significant because impacts are not expected to occur.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and build-out of the Specific Plan area under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar effects from short-term construction activities and long-term occupancy of the Specific Plan area, such as exposure to fugitive dust, contact with chemical pollutants, human intrusion, hydrologic or biogeochemical alterations, non-native, invasive species, domestic animals, light from Commerce Center Drive Bridge, and light and noise from vehicles. The implementation of the SCP and the build-out of the VCC (Alternative 3 only) and Entrada planning areas would not result in secondary impacts to this species. The loss or degradation of habitat and the loss of individual undescribed snails due to secondary impacts resulting from implementation of the RMDP and build-out of the Specific Plan area under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

This species would not be subject to direct or indirect impacts by the proposed Project. Construction activities would not occur in the Middle Canyon Spring complex, and this species is not expected to occur outside of this area. Nonetheless, Mitigation Measure BIO-86 is being proposed to require surveys for this species in all perennial water sources prior to construction. BIO-86 requires focused surveys by a qualified biologist for the undescribed snail species prior to the commencement of grading/construction activities in any drainage area supporting perennial flow. Any individuals of the undescribed snail species found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If undescribed snails are discovered during aquatic and semi-aquatic pre-construction surveys in any other perennial flowing water, the applicant shall consult with CDFG prior to initiating disturbance of the area.

The Project would result in significant secondary impacts to individuals and habitat occupied by this species, absent mitigation. The applicant will implement several mitigation measures to avoid, minimize, and mitigate secondary impacts to individuals and associated habitat. The primary measure to protect the Middle Canyon Spring complex is to avoid construction activities within the complex. Potential short-term secondary impacts include accidental clearing,

trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality. These impacts would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities, by providing erosion control plans, dust control, and an overall Project SWPPP; by providing guidelines for stream diversion; by preventing pollutants from entering flowing streams and storm flows; by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB, and by requiring temporary fencing and signage around the Middle Canyon Spring during all phases of construction adjacent to the spring.

Potential long-term secondary impacts to the undescribed snail include the introduction of non-native, invasive plant and animal species, increased human activity, trampling, and soil compaction. These impacts would be minimized to a level that is adverse but not significant by: providing revegetation plans for the River Corridor SMA; placing restrictions on plant palettes proposed for use on landscaped slopes; restricting access to, grazing within, and recreational usage of the River Corridor SMA; and providing for transition areas along the River Corridor SMA.

As described above, a number of factors may affect the long-term viability of the undescribed snail. In order to address both short-term and long-term secondary impacts to this species, the applicant will prepare a plan that identifies measures to maintain the undescribed snail species. The plan (outlined in BIO-77 below) will provide guidelines for collecting additional data on existing site conditions, developing a construction monitoring program and a post-development monitoring program, developing threshold parameters that activate consultation with CDFG and adaptive management measures for water quality and water quantity issues, excluding unauthorized entry into the spring, and contingency measures. BIO-77 identifies interim thresholds to trigger immediate consultation with CDFG, and any actions, if needed, to offset potential effect, should data indicate a deviation of more than 10% from the existing condition. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

Additionally, both short-term and long-term secondary impacts will be minimized through revegetation, restoration, and enhancement plans designed to provide for the long-term maintenance of the River Corridor SMA in a natural state and through the implementation of the plan.

All specific mitigation measures for the undescribed snail are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-33 SECONDARY IMPACTS – UNDESCRIBED SNAIL SPECIES

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR included measures that will mitigate for short-term secondary impacts to the undescribed snail, such as altered hydrology and water quality.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-20, which states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

In order to avoid and minimize impacts due to hydrologic alterations and water quality impacts, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-58, which requires conformance with all provisions of required National Pollutant Discharge Elimination System (NPDES) permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts due to the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7 and SP-4.6-19:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary.

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation, that native riparian plants be incorporated into landscaping where feasible, that roads and bridges be designed to discourage access to River Corridor SMA, that bank stabilization be composed of ungrouted rock, and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

In order to avoid and minimize impacts due to increased human activity, trampling, and the compaction of soils, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, and SP-4.6-24:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes,

other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to the undescribed snail.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45, BIO-52, and BIO-74:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements, conduct meetings with contractor describing the importance of restricting work to the restricted areas, discuss procedures for minimizing harm to or harassment of wildlife, review the construction area in the field with the contractor in accordance with the final grading plan, conduct a final field review of staking, be present during initial vegetation clearing and grading, and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 will be implemented to mitigate for a variety of potential short-term secondary impacts, including hydrology, water quality, and exposure to fugitive dust, and specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution and with hydrologic alterations and water quality impacts would also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72:

BIO-72 specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize long-term secondary impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measures BIO-73 and BIO-74:

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable,

within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

Several additional measures (BIO-51 and BIO-77) will be implemented to mitigate for long-term secondary impacts related to water quality and quantity, light from Commerce Center Drive Bridge, and light and noise from vehicles.

BIO-51 will minimize impacts to natural areas and riparian resources, including the Middle Canyon Spring, from associated lighting and stormwater runoff associated with bridges (*i.e.*, Commerce Center Drive Bridge) over the Santa Clara River. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bollard lights, or other available light and glare minimization methods. Bridges will be designed to minimize normal vehicular lighting from trespassing into natural areas using side walls a minimum of 24 inches high. All stormwater from the bridges will be directed to water treatment facilities for water quality treatment.

BIO-77 describes preparation of a plan and measures to be implemented by the applicant to maintain the populations of the undescribed snail and sunflower species. The plan will provide guidelines for collecting data on existing site conditions, developing a construction monitoring program and a post-development monitoring program, developing threshold parameters that activate adaptive management measures for water quality and water quantity issues, excluding unauthorized entry into the spring, and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

Secondary impacts would also be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include Mitigation Measures BIO-1 through BIO-16 and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of

success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.BIO-86 requires focused surveys for the undescribed snail species by a qualified biologist prior to the commencement of grading/construction activities in any area supporting perennial flow. Any individuals of the undescribed snail species found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If undescribed snails are discovered during aquatic and semi-aquatic pre-construction surveys in any other perennial flowing water, the applicant shall consult with CDFG prior to initiating disturbance of the area. A report documenting the number of snails located, the conditions of the area, and where the species has been relocated to, if applicable, shall be submitted to CDFG within 60 days following the relocation.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to previously undescribed snail species would be adverse but not significant.

COAST HORNED LIZARD (CSC)

Life History

The coast horned lizard (*Phrynosoma coronatum*) occurs throughout most of California in locations west of the desert and Cascade-Sierran highlands, in elevations from sea level to around 2,438 meters (8,000 feet) AMSL (Stebbins 2003). Prior to 1997, two subspecies (*P.c. blainvillei, P.c. frontale*) were recognized, but recent work has demonstrated that the two are synonymous (Brattstrom 1997).

Despite a wide-ranging distribution, the coast horned lizard seems to be restricted to localized populations because of its association with loose soils that have a high sand content (Jennings and Hayes 1994). The species is found in a wide variety of vegetation types with the requisite loose sandy soils, including California sagebrush scrub, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest (Klauber 1939; Stebbins 1954). Other identified habitat characteristics include open areas with limited overstory for basking and low but relatively dense shrubs for refuge (Jennings and Hayes 1994). In inland areas, the species is restricted to areas with pockets of open microhabitat, created by disturbance (*e.g.*, floods, fire, roads, grazed areas, fire breaks) (Jennings and Hayes 1994).

Up to 90% of the diet of the coast horned lizard consists of native harvester ants (*Pogonomyrmex* spp.) (Pianka and Parker 1975), and coast horned lizards do not appear to eat non-native Argentine ants (*Linepithema humile*) (Jennings and Hayes 1994). Other slow moving insects, such as beetles, flies, and caterpillars, are consumed opportunistically when encountered (Presch 1969; Pianka and Parker 1975).

Coast horned lizards emerge from hibernation in March, and they become surface active in April through July, after which most adults aestivate (enter summer hibernation) (Hagar 1992). The adults reappear again briefly in late summer and return to overwintering sites between August and early October depending upon elevation (Klauber 1939; Howard 1974; Hagar 1992). In southern California, the male coast horned lizard reproductive cycle begins during mid- to late March and ends in June (Goldberg 1983). Coast horned lizards lay one clutch of six to 17 eggs (average of 11 to 12 eggs) each year from May through early July (Stebbins 1954; Howard 1974; Goldberg 1983). Incubation requires approximately two months and hatchlings first appear in late July and early August (Shaw 1952; Howard 1974; Hagar 1992). There are no movement and dispersal data specifically for the coast horned lizard, but horned lizards as a group show limited home ranges, usually less than five acres (*e.g.*, Munger 1984).

The two main threats to the coast horned lizard from urban development are habitat loss and fragmentation and the spread of Argentine ants. Habitat fragmentation is a threat because coast horned lizards probably have limited mobility and relatively small home ranges. They are considered to be relatively sedentary animals and thus unsuitable habitat and physical obstacles,

such as roads separating suitable habitat patches, likely are a significant barrier to dispersal. Argentine ants, as a highly invasive species, colonize disturbed soils associated with building foundations, roads, and landfills, and they expand into adjacent areas, eliminating native ant colonies (Ward 1987). Argentine ants are also associated with moist microhabitats, which may be artificially created by over-irrigation and/or surface runoff from urban areas. Because coast horned lizards do not appear to eat non-native Argentine ants (Jennings and Hayes 1994), this species can eliminate the coast horned lizard's primary food source. In southern California, Argentine ants are considered to have greatly reduced the numbers of the coast horned lizard (Suarez and Case 2002). Other threat factors associated with urban development include an increase in the abundance of urban-related predators; such as pet, stray, and feral cats and dogs; increased human activity resulting in collection or habitat degradation (*e.g.*, trampling of vegetation and introduction of exotic species); pesticides, which may reduce prey or cause secondary poisoning; off-road vehicles; cattle grazing; and frequent fires that may cause long-term habitat transitions from shrublands (scrubs and chaparrals) to annual grassland.

Survey Results

A habitat assessment and surveys for reptiles using pitfall traps were conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences 2006A). One coast horned lizard was captured during the 2006 pitfall trap surveys, and five additional coast horned lizards were incidentally observed during the 2004 reptile surveys (Impact Sciences 2006A). The coast horned lizard observed during the 2006 surveys was captured in the eastern portion of the Specific Plan area (in the vicinity of the Potrero Village development area) in an area described as containing sandy soils and riparian and non-native grassland vegetation (Impact Sciences 2006A). No location or habitat association information was provided for the coast horned lizards incidentally observed during the 2004 surveys. Coast horned lizard was also observed along the Santa Clara River floodplain, approximately 500 feet south of The Old Road Bridge in 2006 (Huntley 2006). Given that coast horned lizards have been observed in the Project area, they are assumed to be present within the following on-site plant communities that provide suitable habitat: alluvial scrub, arrow weed scrub, big sagebrush scrub, coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, California walnut woodland, Mexican elderberry, *Eriodictyon* scrub, mixed oak woodland and forest, purple needlegrass, river wash, valley oak woodland, and valley oak/grass. A total of 10,734 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 140 acres of suitable habitat would be permanently lost through implementation of the RMDP, representing 1.3% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats). A total of 61 acres would be temporarily impacted. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in a small loss of potential habitat for the species, although this impact has not been quantified.

The coast horned lizard is still a wide-ranging species, however, it is becoming increasingly uncommon as a result of loss of habitat and impacts from the Argentine ant. Although construction of the proposed Project would be phased over time, the loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,144 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 29.3% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats).

Although the coast horned lizard is still a wide-ranging species, a relatively large amount and percentage of on-site habitat for the coast horned lizard would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 29.3% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,283 acres (30.6%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable

habitat would have a substantial adverse effect on the distribution of the coast horned lizard on site, thus substantially reducing its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Coast horned lizards are relatively sedentary, and those large-scale construction and/or grading activities associated with the RMDP causing permanent and temporary impacts likely would result in injury or mortality of individuals as a result of direct contact with or crushing by construction equipment used for vegetation clearing and grading. In addition, hibernating individuals could be injured or killed during construction and/or grading activities conducted during colder months by entombment or direct contact with grading equipment. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in impacts to coast horned lizard individuals if fence construction occurred during colder months when horned lizards are hibernating. This species probably is capable of escaping potential impacts from fence construction when it is active on the ground surface in the warmer months because ground disturbances would be much more localized.

Because this species is becoming increasingly less common, impacts to coast horned lizards that would occur as a result of construction and/or grading activities would have a substantial adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial injury and mortality of coast horned lizards during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on this species on site by eliminating it from approximately 29.3% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short-term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the

potential to affect coast horned lizards in areas adjacent to construction zones. These impacts include the inadvertent disturbance of habitat and loss of individual lizards in areas outside the development footprint; construction-related dust, which may affect its prey; and other disruptions associated with increased human activity. Although construction activities associated with RMDP facilities will be short term, will be phased over a relatively long period of time, and will affect a relatively small proportion of potential coast horned lizard suitable habitat in the Project area, this species is becoming increasingly uncommon; therefore, the construction activities would have a substantial adverse effect on this species (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas could also include habitat fragmentation and isolation of some local populations of coast horned lizard, making the species more vulnerable to extirpation from smaller habitat patches. In addition, over the long term, the close proximity of urban development to suitable coast horned lizard habitat could result in disruption of essential behavioral activities (*e.g.*, foraging, reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation and introduction of invasive species, such as Argentine ants, or off-road vehicles); harassment and collection; predation by pet, stray, and feral cats and dogs; increased roadkill; and use of pesticides, which may reduce its prey or cause secondary poisoning. These secondary impacts would permanently reduce coast horned lizard populations along the urban–open space edge and would contribute to the reduction of the range and distribution of the coast horned lizard in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the coast horned lizard (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 138 acres (1.3%) of permanent loss and 74 acres of temporary loss;
- Alternative 4 – 133 acres (1.2%) of permanent loss and 61 acres of temporary loss;
- Alternative 5 – 157 acres (1.5%) of permanent loss and 79 acres of temporary loss;

- Alternative 6 – 169 acres (1.6%) of permanent loss and 79 acres of temporary loss; and
- Alternative 7 – 73 acres (0.7%) of permanent loss and 151 acres of temporary loss.

Compared to Alternative 2, which would result in 140 acres (1.3%) of permanent loss and 61 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternatives 3, 5, 6, and 7 would be somewhat greater, and the combined direct permanent and temporary loss of habitat would be somewhat less under Alternative 4. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2, and would be substantially less under Alternative 7. Because the coast horned lizard is becoming increasingly uncommon, direct impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the coast horned lizard (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,937 acres (27.4%) of permanent loss;
- Alternative 4 – 2,815 acres (26.2%) of permanent loss;
- Alternative 5 – 2,736 acres (25.5%) of permanent loss;
- Alternative 6 – 2,420 acres (22.5%) of permanent loss; and
- Alternative 7 – 2,127 acres (19.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,144 acres (29.3%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to

coast horned lizard suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the coast horned lizard occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the coast horned lizard:

- Alternative 3 – 3,075 acres (28.6%) of permanent loss;
- Alternative 4 – 2,948 acres (27.5%) of permanent loss;
- Alternative 5 – 2,893 acres (27.0%) of permanent loss;
- Alternative 6 – 2,589 acres (24.1%) of permanent loss; and
- Alternative 7 – 2,199 acres (20.5%) of permanent loss.

Compared to Alternative 2, which would result in 3,283 acres (30.6%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the coast horned lizard occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual coast horned lizards that would occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to

Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual coast horned lizards occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as construction-related dust; human-caused habitat degradation; harassment and collection; predation by pet, stray, and feral cats and dogs; invasive species such as Argentine ants; use of pesticides; and increased roadkill. Short-term and long-term secondary impacts to coast horned lizard resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to coast horned lizard: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of hibernating individuals, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a scientific collecting permit to capture and relocate coast horned lizards. General procedures to avoid and minimize impacts to coast horned lizards during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the coast horned lizard resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,199 acres (20.5%) under Alternative 7 to 3,283 acres (30.6%) under Alternative 2. This would be a substantial loss of suitable habitat and would reduce the size and distribution of the coast horned lizard population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional

mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the coast horned lizard in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 5,687 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the coast horned lizard in these areas will improve habitat quality for the species.

With respect to secondary effects, coast horned lizards occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and dust. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation and collection; invasive species such as Argentine ant; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The large open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation and vehicle collisions. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to the extent feasible. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for coast horned lizard are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-34 IMPACTS TO INDIVIDUALS – COAST HORNED LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that would avoid, minimize, or mitigate the loss of coast horned lizard individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during

development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce impacts to coast horned lizard individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to coast horned lizard individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-35 LOSS OF HABITAT – COAST HORNED LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the coast horned lizard through protection, restoration and enhancement, and management of habitat. Although this species primarily uses scrub and chaparral habitats, protection, restoration and enhancement, and management of habitat in the River Corridor SMA will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that are used by coast horned lizard,

and these areas would benefit from restoration activities. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the coast horned lizard through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. As noted above, terrestrial habitats used by coast horned lizard occur in association with riparian and wetland habitats and will benefit from restoration activities.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the coast horned lizard would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-36 SECONDARY IMPACTS – COAST HORNED LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the coast horned lizard, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation**,** harassment and collection, and increased roadkill.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term

secondary impacts to habitat and/or coast horned lizard individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address secondary effects such as construction-related dust, increased human activity, predation by pet, stray, and feral cats and dogs, and invasion by Argentine ants, which are known to displace native ant prey for the coast horned lizard; and pesticides, which may reduce prey or cause secondary poisoning.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-64, BIO-69, and BIO-73 will also be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent loss of prey and secondary poisoning and requires preparation of an IPM plan controlling the use of pesticides on site prior to the issuance of building permits.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the

preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to coast horned lizard and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

COAST PATCH-NOSED SNAKE (CSC)

Life History

The coast patch-nosed snake (*Salvadora hexalepis virgultea*) ranges from west-central Nevada south to the tip of Baja California and northwestern Sonora, and from coastal southern California to southwestern Utah and central Arizona. The coast patch-nosed snake is found at elevations from below sea level to around 2,130 meters (6,988 feet) AMSL (Goldberg 1995).

The coast patch-nosed snake is diurnal (Stebbins 2003) and can be found throughout the day during the milder months of spring. Activity is restricted to the mornings and late afternoons during the summer months. As an active, diurnal snake, it will occasionally take refuge in rock crevices, in small mammal burrows, and under vegetation. May and June are the typical months of peak activity; however, in the southern part of its range, activity may extend all year during mild to warm weather. This subspecies is a broad generalist in its diet and an opportunistic feeder that probably preys on anything it can overpower including small mammals (*Dipodomys*), lizards (*Aspidoscelis, Coleonyx*), and the eggs of lizards and snakes (Stebbins 2003).

Goldberg (1995) found that breeding generally occurs from July through October, but possibly as early as late spring. Clutch size typically ranges from four to seven eggs (Wright and Wright 1957). Goldberg (1995) also found four females lacking yolk deposition in ovarian tissues in the month of April, suggesting that not all females breed each year. Under laboratory conditions, the incubation period of eggs is about 85 days (Stebbins 2003). Friable or sandy soil or the presence of rodent burrows are required conditions for the reproductive cycle of patch-nosed snakes (Zeiner *et al.* 1988).

The main threats to the coast patch-nosed snake from urban development are likely habitat fragmentation and isolation of populations. The coast patch-nosed snake has not been studied adequately to specifically identify secondary threats, but it probably is also vulnerable to several effects related to urbanization. An increase in the abundance of urban-related predators; such as pet, stray, and feral cats and dogs; could result in mortality of coast patch-nosed snakes. Increased human activity could result in habitat degradation (*e.g.*, trampling of vegetation and introduction of exotic species) and in harassment and collection. Increased traffic could result in increased roadkill. The use of rodenticides near open space could result in a reduced prey base, potential secondary poisoning, and fewer mammal burrows that provide shelter and protection.

Survey Results

A habitat assessment and surveys for reptiles were conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences 2006A). Coast patch-nosed snakes were not trapped or otherwise observed during the surveys. The Project area is located toward the northern extent of the subspecies' range (Stebbins 2003) and, based on the CNDDB (CDFG 2007A), the coast

patch-nosed snake has only been documented south of the Project area. However, because this subspecies is uncommon and based on the presence of suitable habitat, because the Project area is within the range of the subspecies as described by Stebbins (2003), and because the Project area was not surveyed in its entirety or at a level of detail necessary to determine presence or absence of a particular reptile species, the coast patch-nosed snake was identified as having potential to occur in the Project area (Impact Sciences 2006A). Therefore, the coast patch-nosed snake is considered potentially present within the following on-site plant communities: alluvial scrub, big sagebrush scrub, coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, *Eriodictyon* scrub, and river wash. A total of 6,908 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/ No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 102 acres of suitable habitat would be permanently lost through implementation of the RMDP, representing 1.5% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats). A total of 47 acres would be temporarily impacted. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in a small loss of potential habitat for the coast patch-nosed snake, although this impact has not been quantified.

Although the coast patch-nosed snake is still a wide-ranging species, it has suffered habitat loss and fragmentation due to urban development and, therefore, the loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on coast patch-nosed snake (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 2,006 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 29.0% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats).

Although the coast patch-nosed snake is still a wide-ranging species, a relatively large amount and percentage of on-site habitat for the coast patch-nosed snake would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of coast patch-nosed snake on site by eliminating it from 29.0% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,107 acres (30.5%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the coast patch-nosed snake on site, thus substantially reducing its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Coast patch-nosed snakes are not very mobile, and those large-scale construction and/or grading activities associated with the RMDP causing permanent and temporary impacts likely would result in injury or mortality of individuals as a result of direct contact with or crushing by construction equipment used for vegetation clearing and grading. In addition, hibernating individuals could be injured or killed during construction and/or grading activities conducted during colder months by entombment or direct contact with grading equipment. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in impacts to coast patch-nosed snake individuals if fence construction occurred during colder months when individuals are hibernating. The coast patch-nosed snake probably is capable of escaping potential impacts from fence construction when it is active on the ground surface in the warmer months because ground disturbances would be much more localized.

Although the coast patch-nosed snake is still widely distributed throughout its range, it is uncommonly observed and assumed to be declining as a result of habitat loss and fragmentation. Impacts to coast patch-nosed snakes that would occur as a result of construction and/or grading activities would have a substantial adverse effect on coast patch-nosed snake (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial mortality of coast patch-nosed snakes during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on coast patch-nosed snake on site by eliminating it from 29.0% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could include disruptions associated with increased human activity, noise, and ground vibration, and nighttime illumination, the latter of which may disrupt the natural activity cycle of this diurnal species, making it more vulnerable to predation by nocturnal predators, such as owls and coyotes. Although the secondary impacts of the construction activities would be short term and would be phased over time, this species appears to be declining within its range. Therefore, short-term secondary effects would have a substantial adverse effect on coast patch-nosed snake (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in habitat fragmentation and isolation of some local populations of the coast patch-nosed snake, making the species more vulnerable to extirpation from smaller habitat patches. In addition, over the long term, the close proximity of urban development to suitable coast patch-nosed snake habitat could result in disruption of essential behavioral activities (*e.g.*, foraging and reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation and introduction of invasive species, such as Argentine ant) and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used by coast patch-nosed snake for refuge and a reduction in the prey base for this species. These

secondary impacts would permanently reduce coast patch-nosed snake populations along the urban–open space edge and would contribute to the reduction of the range and distribution of the coast patch-nosed snake in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the coast patch-nosed snake (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 95 acres (1.4%) of permanent loss and 54 acres of temporary loss;
- Alternative 4 – 97 acres (1.4%) of permanent loss and 45 acres of temporary loss;
- Alternative 5 – 100 acres (1.4%) of permanent loss and 59 acres of temporary loss;
- Alternative 6 – 84 acres (1.2%) of permanent loss and 56 acres of temporary loss; and
- Alternative 7 – 47 acres (0.7%) of permanent loss and 76 acres of temporary loss.

Compared to Alternative 2, which would result in 102 acres (1.5%) of permanent loss and 47 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternative 3 would be the same, it would be marginally lower under Alternative 6, not substantially different under Alternatives 4 and 5, and somewhat lower under Alternative 7. The larger difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under this alternative.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2, and would be somewhat less under Alternative 7. Because the coast patch-nosed snake appears to be declining in its range, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the coast patch-nosed snake (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 1,895 acres (27.4%) of permanent loss;
- Alternative 4 – 1,830 acres (26.5%) of permanent loss;
- Alternative 5 – 1,780 acres (25.8%) of permanent loss;
- Alternative 6 – 1,525 acres (22.1%) of permanent loss; and
- Alternative 7 – 1,355 acres (19.6%) of permanent loss.

Compared to Alternative 2, which would result in 2,006 acres (29.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to coast patch-nosed snake suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the coast patch-nosed snake occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the coast patch-nosed snake:

- Alternative 3 – 1,989 acres (28.8%) of permanent loss;
- Alternative 4 – 1,927 acres (27.9%) of permanent loss;
- Alternative 5 – 1,879 acres (27.2%) of permanent loss;

- Alternative 6 – 1,609 acres (23.3%) of permanent loss; and
- Alternative 7 – 1,402 acres (20.3%) of permanent loss.

Compared to Alternative 2, which would result in 2,107 acres (30.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the coast patch-nosed snake occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual coast patch-nosed snakes that would occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual coast patch-nosed snakes occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as human-caused habitat degradation and harassment and collection; invasive species such as Argentine ant; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used by coast patch-nosed snake for refuge and a reduction in the prey base for this species. Short-term and long-term secondary impacts to coast patch-nosed snake resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC

(Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to coast patch-nosed snake: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of individuals in burrows, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a Scientific Collecting Permit to capture and relocate coast patch-nosed snakes. General procedures to avoid and minimize impacts to coast patch-nosed snakes during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the coast patch-nosed snake resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,402 acres (20.3%) under Alternative 7 to 1,989 acres (30.5%) under Alternative 2. This would be a substantial loss of suitable habitat and would reduce the size and distribution of the coast patch-nosed snake population, if present, in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the coast patch-nosed snake in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 3,724 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the coast patch-nosed snake in these areas will improve habitat quality for the species by providing additional cover and habitat for prey species.

With respect to secondary effects, coast patch-nosed snakes occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and lighting. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation and collection; invasive species, such as Argentine ant; pet, stray, and cats and feral dogs; vehicle collisions; and use of rodenticides. The large

open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation and vehicle collisions. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Rodenticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to the extent feasible. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for coast patch-nosed snake are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-37 IMPACTS TO INDIVIDUALS – COAST PATCH-NOSED SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate impacts to coast patch-nosed snake individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce impacts to coast patch-nosed snake individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to coast patch-nosed snake individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-38 LOSS OF HABITAT – COAST PATCH-NOSED SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the coast patch-nosed snake through protection, restoration and enhancement, and management of habitat. Although coast patch-nosed snake primarily uses scrub, chaparral habitat, and river wash habitats, protection, restoration and enhancement, and management of habitat in the River Corridor SMA will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that are used by coast patch-nosed snake, and these areas would benefit from restoration activities. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the coast patch-nosed snake through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. As noted above, terrestrial habitats used by coast patch-nosed snake occur in association with riparian and wetland habitats and will benefit from restoration activities.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the coast patch-nosed snake would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-39 SECONDARY IMPACTS – COAST PATCH-NOSED SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the coast patch-nosed snake, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation, habitat fragmentation, lighting, and harassment and collection.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to habitat and/or coast patch-nosed snake individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All

enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 will be implemented to mitigate for potential lighting impacts by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address specific potential edge effects, including harassment by humans; predation by pet, stray, and feral cats and dogs; invasion by Argentine ants; and use of rodenticides.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection and restoration and enhancement.

In addition, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to the coast patch-nosed snake and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SILVERY LEGLESS LIZARD (CSC)

Life History

The silvery legless lizard (*Anniella pulchra pulchra*) occurs from Antioch, California; south through the Coast, Transverse, and Peninsular ranges and the western slopes of the Sierra Nevada southward into northwestern Baja California, Mexico (Stebbins 2003). The species also occurs in the Antelope Valley and as isolated populations in disjunct mountain ranges along the western edge of the Mojave Desert. Silvery legless lizards have been found at elevations ranging from sea level to 1,554 meters (5,100 feet) AMSL (Stebbins 2003).

The silvery legless lizard is a fossorial (*i.e.*, burrowing) animal and is found primarily in areas with sandy or loose soils where they typically are found beneath leaf litter (Holland and Goodman 1998; Zeiner *et al*. 1988). This species may be found in sparsely vegetated areas in a variety of habitats, including beach dunes; chaparral; California sagebrush scrub; oak woodlands; pine forests; pine–oak woodland; sandy washes; and stream terraces with sycamores, cottonwoods, or oaks (Zeiner *et al*. 1988; Stebbins 2003; Holland and Goodman 1998). The species may forage in leaf litter by day for insects, insect larvae, and spiders and emerge on the surface at dusk or at night (NatureServe 2007; Stebbins 2003). The species is also found under or in the close vicinity of logs, rocks, old boards, and the compacted debris of woodrat nests (Jennings and Hayes 1994). Rocky soils or areas disturbed by agriculture, sand mining, or other human uses are not suitable for legless lizards (Miller 1944; Bury 1972; Hunt 1983; Stebbins 2003). Soil moisture is considered essential for legless lizards to conserve energy at high temperatures and to also allow shedding to occur (Jennings and Hayes 1994). Legless lizards burrow deeper in the soil in the summer in order to avoid high soil temperature at the surface (Hunt 1997). Ovulation occurs in May through July and live births occur in July through October, with typical litter sizes of one or two, but up to four can occur. Females do not produce young every year in southern California (NatureServe 2007).

The silvery legless lizard's dependence on substrates with a high sand content, which are naturally spatially variable, as well as their limited dispersal ability, results in highly fragmented populations (Hunt 1997). The species is vulnerable to habitat disturbance and cannot survive in urbanized, agricultural, or other areas where a loose substrate in which to burrow has been removed or altered (*e.g.*, disturbed by plowing or bulldozing) (Jennings and Hayes 1994). Other factors that may alter the substrate such that the species cannot survive include livestock grazing, off-road vehicle activities, excessive trampling by humans, and the introduction of exotic plant species. These factors decrease soil moisture or alter the conformation of the substrate, which may act to limit the food base or make the substrate physically unsuitable for silvery legless lizards (Jennings and Hayes 1994). Pesticides may also affect silvery legless lizards through reduction of prey or secondary poisoning because of its insect diet (Honegger 1975). Despite

their fossorial behavior, legless lizards are preyed upon by a variety of predators, including domestic and feral cats, which prey heavily on this species (Hunt and Zander 1997).

Survey Results

The reptile assessment and associated surveys conducted by Impact Sciences (2006A) identified silvery legless lizard in the Project area. Of the habitats surveyed, silvery legless lizard was only observed within the leaf litter of coast live oak woodlands in Chiquito Canyon. Overall, 23 individual silvery legless lizards were captured and released (Impact Sciences 2006A). Silvery legless lizard was also observed at two locations in Long Canyon in 2005 (Huntley 2006). In addition to being present on site within coast live oak woodlands, the silvery legless lizard is considered potentially present within the following on-site plant communities: other upland woodlands (*i.e.*, valley oak woodland, California walnut woodland), river wash, riparian scrub (*i.e.*, arrow weed scrub, big sagebrush scrub, mulefat scrub, southern willow scrub, alluvial scrub, big sagebrush–California buckwheat, Mexican elderberry, and shrub tamarisk), riparian woodland (*i.e.*, southern cottonwood–willow riparian forest, southern coast live oak riparian forest), chaparral (*i.e.*, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral), and California sagebrush scrub habitats (*i.e.*, California sagebrush scrub and associations, California sagebrush–black sage, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral). A total of 11,254 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 194 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.7% of suitable habitat on site (**Figure 4.5-114,** Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 113 acres would be temporarily impacted. However, because soil compaction can make habitats unsuitable

for the silvery legless lizard, areas to be temporarily impacted are considered to be a permanent loss of habitat for silvery legless lizard, thus resulting in a permanent loss of 307 acres of habitat, representing 2.7% of suitable habitat on site.

Although the silvery legless lizard is still a wide-ranging species, its habitat has been lost to urban development and substantially degraded by other impacts such as agriculture, grazing, off-road vehicles, and invasive species. Therefore, the direct loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on silvery legless lizard (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,158 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 28.1% of suitable habitat on site (**Figure 4.5-114,** Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

Although the silvery legless lizard is still a wide-ranging species, a relatively large amount and percentage of on-site habitat for the silvery legless lizard would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of silvery legless lizard on site by eliminating it from 28.1% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct (including permanent and temporary impacts) and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,465 acres (30.7%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the silvery legless lizard on site, thus substantially reducing its range on site (significance criteria 1 and 7). The combined direct and indirect permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Silvery legless lizards are not very mobile and, therefore, large-scale construction and/or grading activities causing permanent and temporary impacts likely would result in injury or mortality of individuals as a result of direct contact with or crushing by construction equipment used for vegetation clearing and grading. In addition, aestivating and hibernating individuals could be injured or killed during construction and/or grading activities conducted during both hotter and colder months by direct contact with grading equipment or entombment. The risk of impacts to individuals associated with fence construction for the SCP is probably relatively low because disturbances would be much more localized.

Because of general habitat loss and degradation throughout its range, impacts to silvery legless lizards that would occur as a result of construction and/or grading activities would have a substantial adverse effect on silvery legless lizard (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial injury and mortality of silvery legless lizards during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on silvery legless lizard on site by eliminating it from 28.1% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP and SCP facilities would have the potential to affect silvery legless lizard in areas adjacent to construction zones. These impacts could include soil compaction associated with construction staging and equipment storage areas. Even though the silvery legless lizard is subterranean, it may forage on the surface at night and construction-related dust could affect its prey. Because of general habitat loss and degradation throughout its range, secondary impacts associated with construction activities would have a substantial adverse effect on silvery legless lizard; cause it to drop below self-sustaining levels on site or rangewide; threaten to eliminate it on site or rangewide; or substantially reduce its number or restrict its

range (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include short-term construction-related secondary impacts, such as the inadvertent disturbance of habitat and loss of individual lizards and disruptions associated with increased human activity, and soil compaction associated with construction staging and equipment storage areas. Potential long-term, development-related secondary impacts include compaction of soils from excessive recreational use; the introduction of exotic plant and animal species, such as Argentine ants; habitat fragmentation and isolation of populations; potential disruption of essential behavioral activities and greater vulnerability to human activities (*e.g.*, habitat degradation and harassment); predation by pet, stray, and feral cats and dogs within about 200 feet of the urban–open space edge (CBI 2000); and use of pesticides which may reduce its prey or cause secondary poisoning. These secondary impacts could permanently reduce populations of silvery legless lizard and contribute to the reduction of its range and its distribution in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the silvery legless lizard (**Figures 4.5-115** through **4.5-119,** Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat) (note that, because of soil compaction, temporary impacts are considered to be a permanent loss of suitable habitat for silvery legless lizard):

- Alternative 3 – 177 acres (1.6%) of permanent loss and 127 acres of temporary loss, for a total loss of 304 acres (2.7%);
- Alternative 4 – 173 acres (1.5%) of permanent loss and 111 acres of temporary loss, for a total loss of 284 acres (2.5%);
- Alternative 5 – 203 acres (1.8%) of permanent loss and 136 acres of temporary loss, for a total loss of 339 acres (3.0%);

- Alternative 6 – 202 acres (1.8%) of permanent loss and 131 acres of temporary loss, for a total loss of 335 acres (3.0%); and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 185 acres of temporary loss, for a total loss of 267 acres (2.4%).

Compared to Alternative 2, which would result in 194 acres (1.7%) of direct permanent loss and 113 acres of temporary impacts (307 acres (2.7%) total loss), the combined permanent and temporary loss of habitat under Alternative 3 would not be substantially different, and the combined permanent and temporary loss of habitat would be marginally reduced under Alternative 4, substantially reduced under Alternative 7, and somewhat increased under Alternatives 5 and 6. However, the percentage of total impacts would be small under all of the alternatives, ranging from 2.4% for Alternative 7 to 3.0% for Alternatives 5 and 6. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

The overall permanent loss of habitat for the silvery legless lizard from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to overall habitat loss under Alternative 2, and is substantially less under Alternative 7. Because of habitat loss and degradation throughout its range, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the silvery legless lizard (**Figures 4.5-115** through **4.5-119,** Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 2,949 acres (26.2%) of permanent loss;
- Alternative 4 – 2,824 acres (25.1%) of permanent loss;
- Alternative 5 – 2,742 acres (24.4%) of permanent loss;
- Alternative 6 – 2,423 acres (21.5%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.9%) of permanent loss.

Compared to Alternative 2, which would result in 3,158 acres (28.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be

constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to silvery legless lizard suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the silvery legless lizard occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct (including permanent and temporary impacts) and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the silvery legless lizard:

- Alternative 3 – 3,523 acres (31,3%) of permanent loss;
- Alternative 4 – 3,108 acres (27.6%) of permanent loss;
- Alternative 5 – 3,081 acres (27.4%) of permanent loss;
- Alternative 6 – 2,839 acres (25.2%) of permanent loss; and
- Alternative 7 – 2,395 acres (21.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,465 acres (30.7%) of combined direct (including permanent and temporary impacts) and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the silvery legless lizard occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual silvery legless lizards as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual silvery legless lizards occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as construction-related dust; human-caused habitat degradation; harassment and collection; invasion by exotic plant and animal species, such as Argentine ants; predation by pet, stray, and feral cats and dogs; and use of pesticides. Short-term and long-term secondary impacts to silvery legless lizard resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to silvery legless lizard: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of aestivating and hibernating individuals, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a scientific collecting permit to capture and relocate silvery legless lizards. General procedures to avoid and minimize impacts to silvery legless lizards during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the silvery legless lizard resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,395 acres (21.3%) under Alternative 7 to 3,465 acres (30.7%) under Alternative 2. This would be substantial loss of suitable habitat and will reduce the size and distribution of the silvery legless lizard population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the silvery legless lizard in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 6,060 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the silvery legless lizard in these areas will improve habitat quality for the species.

With respect to secondary effects, silvery legless lizards occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and dust. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation and collection; invasive species such as Argentine ant; pet, stray, and cats and feral dogs; and use of pesticides. The large open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in, or adjacent to, open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for silvery legless lizard are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-40 IMPACTS TO INDIVIDUALS – SILVERY LEGLESS LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate the loss of silvery legless lizard individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce the impacts to silvery legless lizard individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate silvery legless lizard, coast horned lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to silvery legless lizard individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-41 LOSS OF HABITAT – SILVERY LEGLESS LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the silvery legless lizard through protection, restoration and enhancement, and management of habitat.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the silvery legless lizard through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation,

restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the silvery legless lizard would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-42 SECONDARY IMPACTS – SILVERY LEGLESS LIZARD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the silvery legless lizard, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation and harassment.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to habitat and/or silvery legless lizard individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning

Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address secondary effects such as construction-related dust, increased human activity, invasion by Argentine ants, and predation by pet, stray, and feral cats and dogs, and use of pesticides.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection, restoration and enhancement, and management.

In addition, BIO-63, BIO-69, and BIO-73 will be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-64 will be implemented to prevent loss of prey and secondary poisoning and requires preparation of an integrated pest management (IPM) plan controlling the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to silvery legless lizard and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTH COAST GARTER SNAKE (CSC)

Life History

The common garter snake (*Thamnophis sirtalis*) has the northernmost range of any reptile in North America, and is wide ranging and locally abundant. The genus *Thamnophis* and the species *T. sirtalis* represent taxonomic clades, and are closely related genetic groups sharing common ancestry. South coast garter snake (*Thamnophis sirtalis* ssp.) may represent a distinct taxon but has not yet been described (Jennings and Hayes 1994). Natural history records for the south coast garter snake in California include sightings from Santa Clara River Valley (Ventura County) south to San Pasqual (San Diego County) (NatureServe 2007). South coast garter snakes are endemic to southern California's coastal plain and found primarily between sea level and 800 meters (2,625 feet) AMSL (NatureServe 2007). The south coast garter snake has a small range along the coast of southern California. The snake had been displaced from 75% of its historical localities as of 1994 (Jennings and Hayes 1994). Individuals can be numerous along permanent and semi-permanent sources of water (Zeiner *et al.* 1988). The diurnal snakes are most active in the early morning and late afternoon in the summer and in midday in cooler times (Zeiner *et al.* 1988). Common garter snakes forage on land and in quiet pools of water. They prey on slugs, earthworms, leeches, small fish, tadpoles, insects, small mammals and birds, and lizards (Jennings and Hayes 1994; Zeiner *et al.* 1988).

Common garter snakes generally retreat to communal hibernation burrows in October (Jennings and Hayes 1994). Occasionally, on warmer winter days, the snakes will emerge from hibernation and bask in the sun. Common garter snakes of southern California in higher elevations, inland, and in colder areas hardly emerge from their hibernation (Zeiner *et al.* 1988). Hibernation lasts until March. Males emerge first and prepare for mating.

During the spring emergence, males will court and mate with females. The polygynandrous south coast garter snake may breed with several partners, but not all may mate. Sexually mature females (two years old) are able to store sperm and may still give birth without mating that season (Zimmerman 2002). When males and females have mated, they disperse and head for summer feeding and birthing habitat. Common garter snakes are viviparous, or live-bearing, reptiles. Gravid females will bear two to 20 live young between the late summer and early fall (Jennings and Hayes 1994). Female common garter snakes give birth in and under loose bark, rotting logs, and dense vegetation near ponds and stream margins (Zeiner *et al.* 1988).

As of the 1990s, the south coast garter snake was extinct from 18 historical localities and endangered in 24 more (Jennings and Hayes 1994). In addition to the direct loss of habitat, south coast garter snakes are vulnerable to several effects related to urbanization. Development not only directly removes habitat, but urban development also may impede natural movement between habitats (Jennings and Hayes 1994) and habitat quality may be reduced by alteration of channel morphology (NatureServe 2007). Additionally, predation by introduced aquatic species

(*e.g.*, bullfrogs, bass, and snapping turtles), collection for pets, extermination because of fear, urban-related predation pressures (*e.g.*, dogs, raccoons, skunks), competition with non-native turtles, contaminant spills, grazing, off-road vehicle use, and vehicle strikes on roads (Zeiner *et al.* 1988) have all contributed to the sharp decline of this species in recent decades.

Survey Results

South coast garter snakes are distributed throughout marshes, meadows, sloughs, ponds, slow-moving water courses, and riparian vegetation communities and adjacent upland environments. There is a low potential for this species to occur on site based on habitats present within the Project area. The species has not been found within the Project area along the Santa Clara River during field surveys. No focused surveys have been conducted for this species, but no observations have been noted in several wildlife surveys for other riparian and aquatic species (SMEA 1995A; Aquatic Consulting Services 2002A, 2002B, 2002C, 2002D; Impact Sciences 2002; Compliance Biology 2004D; Impact Sciences 2001; Ecological Sciences 2004A). There are known populations of south coast garter snake within the Santa Clara River downstream of the Project area, but no known populations in the upper Santa Clara River watershed. Surveys within the Project area have not resulted in any observations or indications that the common garter snake is present. Based on these negative survey results, the south coast garter snake probably does not occur in the Project area, but, if present, likely has a limited distribution. Because there is some, albeit low, potential for this species to occur on site, the potential impacts of the proposed Project are evaluated in this EIS/EIR. Alluvial scrub, arrow weed scrub, big sagebrush scrub, bulrush–cattail wetland, cismontane alkali marsh, coastal and valley freshwater marsh, herbaceous wetland, Mexican elderberry, mulefat scrub, river wash, southern coast live oak riparian forest, southern cottonwood–willow riparian, and southern willow scrub vegetation communities are suitable habitat for the south coast garter snake. A total of 1,180 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 116 acres of suitable habitat would be permanently lost through implementation of the RMP and the SCP, representing 9.8% of suitable habitat on site (**Figure 4.5-54,** Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 103 acres would be directly temporarily impacted.

No south coast garter snakes have been documented in the Project area in several wildlife surveys, but this analysis assumes at least a low potential for occurrence. Although a limited amount of habitat would be permanently lost, because this species has a small range and had been displaced from 75% of its historical locations as of 1994, habitat loss associated with implementation of the RMDP and the SCP would have a substantial direct adverse effect on this species if it occurs on site; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 109 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 9.2% of the suitable habitat on site (**Figure 4.5-54,** Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

No south coast garter snakes have been documented on the Project area in several wildlife surveys, but this analysis assumes at least a low potential for occurrence. Although a limited amount of habitat would be permanently lost, because this species has a small range and had been displaced from 75% of its historical locations as of 1994, habitat loss due to build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial direct adverse effect on this species if it occurs on site; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 224 acres (19.0%).

Although a limited amount of habitat would be permanently lost as a result of the combined direct and indirect permanent impacts, because this species has a small range and had been displaced from 75% of its historical locations as of 1994, habitat loss due to implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial direct adverse effect on this species if it occurs on site; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The species has not been found in the Santa Clara River during numerous surveys of the River corridor in the Project area and is considered to have a low probability of occurring on site. Some suitable habitat is present in the Salt Creek (although water quality is impaired) and Potrero Canyon tributaries on the south side of the River, but wildlife surveys in these areas have not detected this species. Implementation of the proposed RMDP would require the construction of bridges and bank stabilization within the River corridor and in Potrero Canyon, but it is not expected that construction and grading activities would result in injury or mortality of south coast garter snake. However, for the purpose of this analysis, at least a low probably of the occurrence of the species on site is assumed. If present, construction activities could result in injury or mortality of south coast garter snakes in the disturbance zone as a result of direct contact of adults and juveniles with construction equipment or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as by introduction of mud, silt, or chemical pollutants, may cause south coast garter snakes to abandon the site and make them more vulnerable to impacts such as vehicle collisions and exposure to predators and harsh environmental conditions. Implementation of the SCP would not directly impact this species.

Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, if impacts to individuals occurred as a result of construction activities, the impact would have a substantial direct adverse effect on this

species; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Although suitable habitat for south coast garter snake is present, no individuals have been observed in the Project area during wildlife surveys and the probability of the species occurring on site is low. However, because a low probability of occurrence on site is assumed for this analysis, impacts to individuals resulting from the build-out of the Specific Plan, VCC, and Entrada planning areas could occur, including injury or mortality of individuals in the disturbance zone as a result of direct contact with construction equipment or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as by introduction of mud, silt, or chemical pollutants, may cause south coast garter snakes to abandon the site and make them more vulnerable to impacts such as vehicle collisions and exposure to predators and harsh environmental conditions. These impacts, if they occurred, would have a substantial adverse effect on this species; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in construction-related ground vibration which may flush individuals, if present, from refuge areas and expose them to predators and potentially harsh environmental conditions (*e.g.* hot, dry weather). Short-term construction activities could generate dust and disperse sediments and pollutants from construction sites into the Santa Clara River and affect on-site and downstream south coast garter snake populations. Hydrologic and water quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. Construction-related dust could impair water quality and reduce available prey. These factors could result in substantial impacts to south coast garter snakes and/or the degradation of habitat quality. Other construction-related secondary impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could include disruptions to behavioral activities associated with

increased human activity. Implementation of the SCP would not result in secondary impact to this species.

Build-out of the Specific Plan, VCC, and Entrada planning areas could result in habitat fragmentation that could inhibit the movement of the south coast garter snake, if present, in the Project area, especially in areas used by individuals to move into terrestrial habitats. Furthermore, implementation of the RMDP and the long-term occupancy of the Specific Plan, VCC, and Entrada planning areas could result in adverse secondary effects to south coast garter snakes. The proximity of urban development to suitable south coast garter snake habitat could result in disruption of essential behavioral activities, including foraging, breeding, and hibernation. Other potential impacts include predation by introduced invasive species (*e.g.*, Argentine ants, bullfrogs, and exotic fish); collection as pets; urban-related predation pressures (*e.g.*, by cats, dogs, raccoons, skunks, ravens, and crows); off-road vehicle use; cattle grazing; increased incidence of vehicle collisions on roads (Holland 1994); use of pesticides, which may cause secondary poisoning and loss of prey; and invasion of exotic plant species, such as tamarisk, giant reed, and pampas grass that may cause altered hydrology and channel morphology, thus degrading south coast garter snake habitat.

Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, these short-term and long-term secondary impacts could have a substantial adverse effect on the south coast garter snake if present on site; could substantially reduce the habitat of the species on site or rangewide; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the south coast garter snake (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 89 acres (7.6%) of permanent loss and 110 acres of temporary loss;
- Alternative 4 – 91 acres (7.7%) of permanent loss and 100 acres of temporary loss;

- Alternative 5 – 97 acres (8.2%) of permanent loss and 116 acres of temporary loss;
- Alternative 6 – 74 acres (6.3%) of permanent loss and 107 acres of temporary loss; and
- Alternative 7 – 18 acres (1.5%) of permanent loss and 100 acres of temporary loss.

Compared to Alternative 2, which would result in 116 acres (9.8%) of permanent loss and 103 acres of temporary impacts, the combined permanent and temporary loss of habitat would be somewhat lower under Alternative 5 and substantially lower under Alternatives 3, 4, 6, and 7. The relatively large difference in permanent impacts between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries as well as other reductions to the Project footprint under Alternative 7 that would result in substantially fewer permanent impacts to suitable habitat for the south coast garter snake compared to the other alternatives.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 ranges from marginally reduced to substantially reduced compared to the overall habitat loss under Alternative 2. Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, the direct impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the south coast garter snake (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 85 acres (7.2%) of permanent loss;
- Alternative 4 – 67 acres (5.7%) of permanent loss;
- Alternative 5 – 64 acres (5.4%) of permanent loss;
- Alternative 6 – 36 acres (3.0%) of permanent loss; and
- Alternative 7 – 22 acres (1.8%) of permanent loss.

Compared to Alternative 2, which would result in 109 acres (9.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the

development footprints for the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in reduced impacts to suitable habitat for south coast garter snake compared to the other alternatives.

Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, the overall permanent loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the south coast garter snake:

- Alternative 3 – 175 acres (14.8%) of permanent loss;
- Alternative 4 – 158 acres (13.4%) of permanent loss;
- Alternative 5 – 161 acres (13.6%) of permanent loss;
- Alternative 6 – 110 acres (9.3%) of permanent loss; and
- Alternative 7 – 39 acres (3.3%) of permanent loss.

Compared to Alternative 2, which would result in 224 acres (19.0%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have substantially reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternative 3 impacts are somewhat higher than impacts under Alternatives 4 through 7 because VCC would not be constructed under Alternatives 4 through 7. There would generally be successive reductions in the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7 (Alternative 5 impacts are marginally higher than Alternative 4 impacts) and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the south coast garter snake compared to the other alternatives.

Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, the combined direct and indirect permanent loss of habitat from implementation of the RMD and the SCP and build-out of the

Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual south coast garter snakes as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than the potential under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The potential for impacts to individuals is very low. However, because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, if impacts to individuals occurred as a result of construction activities, the impact would have a substantial direct adverse effect on this species; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, impacts to individual south coast garter snakes occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only) and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2. Each alternative has similar short-term effects from construction activities, such as ground vibration and potential impacts to hydrology and water quality, construction-related dust, and increased human activity. Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in long-term secondary effects such as human-caused habitat degradation, harassment, and collection; predation by pet, stray, and feral cats and dogs; invasive wildlife species; increased incidence of roadkill; and use of pesticides.

Because this species is very uncommon, has a small range, and had been displaced from 75% of its historical locations as of 1994, these short-term and long-term secondary impacts could have a substantial adverse effect on the south coast garter snake if present on site; could substantially reduce the habitat of the species on site or rangewide; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to south coast garter snake: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals, if present, could occur during construction as a result of vegetation clearing and grading and construction activities in ponds and flowing water, including injury and mortality due to direct contact with construction equipment, entombment of hibernating individuals, and increased exposure of individuals flushed from habitat or left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys will be conducted in the riverbed and all riverbed areas within 500 feet of the construction zone and access roads at the appropriate season for south coast garter snake (April 1 to September 1). Any detected individuals will be relocated to suitable pre-approved locations identified in a Relocation Plan prepared by the applicant and approved by CDFG. General procedures to avoid and minimize impacts to south coast garter snake during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any additional encountered individuals. Clearance surveys will be conducted each day prior to construction. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the south coast garter snake. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, design of bridges, culverts, and other structure so as not to impair the movement of aquatic species, and protection of water quality from mud, silt, and other pollutants.

The combined permanent loss of suitable habitat for the south coast garter snake resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 39 acres (3.3%) under Alternative 7 to 224 acres (19.2%) under Alternative 2. Because this species is extremely uncommon and has a small range, if present, this would be a substantial loss of suitable habitat and will reduce the size and distribution of the south coast garter snake population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in the protection of approximately 818 acres of suitable habitat for this species, primarily in the River Corridor SMA, but also within the High Country SMA and Salt Creek area (**Figure 4.5-3**). In addition, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical

analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. Following build-out, the River corridor floodplain would remain 1,000 to 2,000 feet wide and retain the mosaic of habitats, including the relatively narrow wetted channel, benches, and dry terraces that would support the life history of the south coast garter snake.

With respect to secondary effects, any south coast garter snakes occupying habitat in close proximity to construction zones may be disturbed by construction activities, including ground vibration and dust. Ground vibration could cause individuals to emerge from burrows and other refuge areas and expose them to predators, adverse environmental conditions, and increase their chance of injury or mortality from construction equipment and vehicles. Dust may adversely affect water quality and their insect prey. Aquatic habitat, including downstream areas, could be disturbed during construction by hydrological alterations and pollutants that impair water quality, thus adversely affecting habitat quality and prey for this species. Pre-construction surveys to relocate individuals found within 500 of construction areas and access roads, daily clearance surveys, biological monitoring during vegetation clearing and grading in and adjacent to occupied habitat, as well as dust suppression measures, will help reduce the potential effects of ground vibration and dust. Any south coast snakes detected prior to or during construction will be relocated to identified suitable habitat by a qualified biologist holding a Scientific Collecting Permit according to a CDFG-approved Relocation Plan. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, protection of downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; invasive species, including Argentine ant and invasive plants such as giant reed; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All specific mitigation measures for south coast garter snake are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-43 IMPACTS TO INDIVIDUALS – SOUTH COAST GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified four mitigation measures that would avoid, minimize, or mitigate the loss of south coast garter snake individuals through pre-development surveys and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce potential impacts to south coast garter snake individuals. Most of these mitigation measures address potential impacts to wetland/riparian habitats, such as hydrologic alterations and water quality impacts that could adversely affect south coast garter snakes. In addition, pre-construction coordination and biological monitoring will be conducted to reduce impacts.

BIO-89 requires preconstruction surveys at the appropriate season (April 1 to September 1) for south coast garter snake prior to initiating construction for installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the Santa Clara River riverbed and all riverbed areas within 300 feet of construction sites and access roads. Any detected individuals will be relocated to suitable pre-approved locations identified in a Relocation Plan prepared by the applicant and approved by CDFG. The Relocation Plan will include several key elements: (1) timing and location of surveys, including areas where more intensive surveys should be done; (2) trapping/capture and relocation methods; and (3) procedures for recordkeeping of the number of individuals relocated. A qualified biologist will be present during all construction activities within or adjacent to occupied habitat and clearance surveys will be conducted daily in this habitat before onset of construction activities.

The following three mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the south coast garter snake and other semi-aquatic species.

BIO-46 states that during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present, and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded south coast garter snakes.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to south coast garter snake individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7

IMPACT 4.5-44 LOSS OF HABITAT – SOUTH COAST GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for south coast garter snake through habitat protection, restoration and enhancement, and management. SP-4.6-55 and SP-4.6-58, as described above, will also mitigate for loss of habitat as a result of compliance with state and federal permits related to wetlands and water quality.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. In addition to providing a buffer between the development edge and wetland/riparian habitat in the River Corridor SMA, these transition areas will provide potential winter habitat for the south coast garter snake. They may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system totaling approximately 6,100 acres that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the south coast garter snake. These measures refer to habitat protection, restoration and enhancement, and management

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the south coast garter snake would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-45 SECONDARY IMPACTS – SOUTH COAST GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for construction-related short-term secondary impacts to the south coast garter snake, such as altered hydrology and water quality and inadvertent impacts to suitable habitat adjacent to construction zones as well as increased human activity. Mitigation measures to offset long-term secondary impacts, such as habitat fragmentation; invasive plant species; increased human activity; increased predation by pet, stray, and feral cats and dogs and other mesopredators; and other sources of habitat degradation (*e.g.*, grazing), were also identified**.**

In order to mitigate impacts from contact with chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature during construction, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-55 and SP-4.6-58, as described above.

In order to avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA. These measures, in combination with SP-4.6-53 and SP-4.6-59, which require pre-development surveys as described above, will also help reduce the effects of increased human activity. However, these mitigation measures are primarily designed to minimize impacts to off-site resources and alone will not completely mitigate human activity impacts. Because of the infeasibility of locating hibernating individuals prior to construction, long-term mitigation measures relating to habitat preservation and management will contribute to the persistence of the species on site and offset these short-term impacts.

The following mitigation measures address the long-term secondary effects listed above. The Newhall Ranch Specific Plan Program EIR identified the several mitigation measures that primarily address habitat fragmentation, increased predation by mesopredators, increased human populations and recreation in close proximity to open space and wetland/riparian and terrestrial winter habitat for the south coast garter snake, and other activities that could result in degradation of habitat, such as cattle grazing.

SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which relate to the protection, restoration and enhancement, and management of the River Corridor SMA and High Country SMA, will prevent habitat fragmentation and increased predation by mesopredators (by ensuring the continued presence of top predators, such as coyotes) and will offset the impacts of grazing and increased human activity in the Project area.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19, as described above, address the transition area between development and the River Corridor SMA that will both buffer the River Corridor SMA from adverse edge effects and provide potential winter habitat for the south coast garter snake.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

In order to mitigate impacts from grazing, SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to south coast garter snake, including construction-related dust, ground vibration, short-term impacts to hydrology and water quality and long-term impacts, such as increased human activity; habitat degradation from exotic plants; predation by pet, stray, and feral cats and dogs and mesopredators; and increased predation by invasive exotic species, such as Argentine ants and bullfrogs.

BIO-89, as described above, requires preconstruction surveys for south coast garter snake prior to initiating construction activities within 500 feet of construction sites and access roads, as well as daily clearance surveys prior to construction. Detected individuals will be relocated to suitable pre-approved locations identified in a CDFG-approved Relocation Plan. These measures will minimize adverse secondary effects such as ground vibration and dust on the south coast garter snake because individuals would be removed from the general construction area.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and BIO-70, as summarized above, will be implemented. In addition, BIO-44, BIO-45, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG and USFWS.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for south coast garter snake during construction.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 describes preparation of a plan and mitigation measures be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to the south coast garter snake. The plan will provide guidelines for collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG

prior to disturbance within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of Middle Canyon Spring.

Several mitigation measures will mitigate impacts from habitat fragmentation, increased predation by mesopredators, invasive plant species, and long-term increases in human activity and its associated effects.

BIO-1 through BIO-16 and BIO-19, as described above and which refer to habitat protection, restoration and enhancement, and management in the High Country SMA and Salt Creek area, will mitigate for habitat fragmentation effects, including increased predation by mesopredators, by providing for a large, interconnected open space system.

BIO-63 will be implemented to mitigate impacts from predation by pet, stray, and feral cats and dogs. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of aquatic habitat and potential secondary poisoning and loss of prey by pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA regarding wildlife species and install signage to keep people and their animals on existing trails.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the south coast garter snake and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTHWESTERN POND TURTLE (CSC)

Life History

The range of the full species western pond turtle (*Actinemys marmorata*)[1] extends along most of the west coast of North America, primarily west of the Cascade–Sierra crest, from western British Columbia, Canada, to northern Baja California, Mexico (Ernst *et al.* 1994). The subspecies southwestern pond turtle (*A. m. pallida*) ranges south of the San Francisco Bay to northern Baja California, Mexico, and intergrades with the subspecies northwestern pond turtle (*A. m. marmorata*) over a large area in central California (Bury 1970; Stebbins 2003). Isolated populations of the southwestern pond turtle are known to exist as far east as the Mojave Desert in Afton Canyon and the Amargosa River (Lovich 1999). The elevation range for the western pond turtle is from brackish estuarine waters at sea level to over 2,000 meters (6,562 feet) AMSL, but it is uncommon over 1,530 meters (5,020 feet) AMSL (Stebbins 1954; Bury 1963; Holland 1994).

The pond turtle life history described in this subsection applies to both the full species western pond turtle and the subspecies southwestern pond turtle. Where specific information is available for the subspecies southwestern pond turtle, it is described as such. Otherwise, the information is based on studies of the full species western pond turtle.

Western pond turtles are primarily active during the day, but they exhibit some crepuscular activity (around dusk and dawn) and nocturnal activity (Zeiner *et al.* 1988). Although streamed-based behavior is highly variable, western pond turtles typically forage in late afternoon and early evening (Jennings and Hayes 1994). They move a few meters from the local watercourse and into deep pools to feed on slow-moving prey and vegetation (Jennings and Hayes 1994). The young spend most of their time feeding and basking at water's edge. Western pond turtles typically forage on land and in quiet pools of water and, as omnivores with a broad feeding niche, they eat almost anything they can capture (Bury 1986). Western pond turtles are food generalists and highly opportunistic, but they prefer live prey (Ashton *et al.* 1997). Plants are a part of the western pond turtle's diet that provide nutrients when live prey are unavailable, and females are more herbivorous than males (Lovich 1999). Size of prey taken is directly related to the size of the western pond turtle. Western pond turtles consume insects, fish, worms, amphibians and their eggs and larvae, crayfish, cladocera (branchiopod crustaceans such as water fleas), carrion, scat (fecal pellets), filamentous algae, tule (*Schoenoplectus* spp.), cattails (*Typha* spp.), pond lily (*Nuphar polysepalum*), willows (*Salix* spp.), alders (*Alnus* sp.), and ditch grass (*Ruppia* spp.) (Ashton *et al.* 1997; Buskirk 2002; NatureServe 2007).

[1] The scientific name *Actinemys marmorata* is used here following CDFG's Special Animals List (CDFG 2007B) and The Center for North American Herpetology (CNAH 2008). Stebbins (2003) uses the scientific name *Clemmys marmorata*.

Reproductive activity by western pond turtles has been observed from February through November (Holland 1988; Buskirk 2002; Goodman 1997A). Depending on latitude, peak nesting season is from late May through early July but extends from late April through August (Holland 1994). Incubation is typically 80 to 126 days and varies with latitude and temperature (Goodman1997A; Holland 1994; Lardie 1975; Feldman 1982). In the northern portions of their range, hatchlings remain in the nest through the winter, although in southern California, most emerge in the early fall (Holland 1994).

Western pond turtle home range sizes not specifically related to short-term nesting forays and foraging bouts vary between age and sex classes. Bury (1972) studied a population of the western pond turtle in a northern California stream and found that adult males had the largest home range, averaging a mean linear length (*i.e.*, point to point) of 976 meters (3,202 feet). Adult female home ranges averaged 248 meters (814 feet), while juveniles had home ranges with a mean length of 363 meters (1,190 feet). While moving between pools within the stream system, average distances were 354 meters (1,161 feet) for males, 169 meters (554 feet) for females, and 142 meters (466 feet) for juveniles. In an Aliso Creek population, the minimum linear range for nine females averaged 1,273 meters (4,176 feet) (range: 708 to 4,263 meters (2,323 to 13,986 feet)) and two males had ranges of 319 and 709 meters (1,046 and 2,326 feet), respectively (Goodman 1997A). In contrast, the minimum linear ranges for southwestern pond turtles on the San Gabriel River were significantly shorter for females, with an average of 335 meters (1,099 feet) (range: 48 to 966 meters (157 to 3,169 feet)) for 11 females and a range of 1,610 meters (5,282 feet) for a single male. Goodman (1997A) suggested that the relative lack of water in the Aliso Creek study area compared to the San Gabriel River may account for the longer movements of the Aliso Creek population because individuals may have had to move farther to obtain the resources necessary for survival.

For the most part, overwintering sites in the Goodman (1997A) study were relatively close to water. At the Aliso Creek site, the mean distance of overwintering sites from water for seven southwestern pond turtles was 7.3 meters (23.9 feet) (range: 1.5 to 10.7 meters (4.9 to 35.1 feet)). At the San Gabriel River site, the mean distance of overwintering sites for 20 southwestern pond turtles was 32.7 meters (107.3 feet) (range: 12.8 to 60.2 meters (42.0 to 197.5 feet)). However, overwintering sites up to 500 meters (1,640 feet) from watercourses have been observed in southern California for southwestern pond turtles (Holland 1994) and in northern California for western pond turtles (Reese and Welsh 1998). Using radiotelemetry, Reese and Welsh (1997) documented overwintering sites for six males and six females on the Trinity River in Northern California that ranged from 65 meters (213 feet) to 500 meters (1,640 feet), with a mean distance of 203 meters (666 feet). All overwintering sites in the Reese and Welsh (1997) study were outside the riparian zone and located in the adjacent conifer and hardwood forests. Holland (1994) reported that western pond turtles have been found up to one kilometer (3,280 feet) from watercourses and are capable of moving up to five kilometers (3.1 miles) between drainages. Although western pond turtles are capable of moving long distances, they generally are

characterized as relatively sedentary animals. Holland and Goodman (1996) state that "most animals appear to remain within a given watercourse for extended periods of up to several years." In a general review of the terrestrial habitat requirements of semi-aquatic reptiles and amphibians, Semlitsch and Bodie (2003) found that "core terrestrial" habitat (defined as including habitat necessary for feeding, over-wintering, and nesting) ranged from 127 to 289 meters (417 to 950 feet) for reptiles, depending on the species. Semlitsch and Bodie (2003) cited Reese's 1996 Ph.D. dissertation estimate of an average movement of 168 meters (551 feet) and a range of 39 to 423 meters (128 to 1,388 feet) for the western pond turtle as part of their review.

Overwintering sites used by southwestern pond turtles appear to have more vegetation cover than nesting sites. Dominant vegetation at seven overwintering sites at the Aliso Creek site studied by Goodman (1997A) included mulefat, willows, black mustard and tree tobacco, with vegetation cover averaging 65% (range: 25% to 90%). At 20 overwintering sites at the San Gabriel River site, dominant vegetation consisted of scrub oak, yucca, chamise, ceanothus, laurel sumac, bay tree, canyon oak, white sage, black sage, poison-oak, Douglas-fir, monkeyflower, giant rye grass, ash, and non-native grasses. Percent vegetation cover at the 20 sites averaged 64% (range: 20% to 100%).

Loss, alteration, and degradation of aquatic habitat are the greatest threats to the western pond turtle. Over 90% of wetland habitat within its historical California range has been eliminated by agricultural development, flood control, water diversion projects (dams and channelization that alter stream morphology and flow rates), and urbanization (Brattstrom and Messer 1988; NatureServe 2007; Reese and Welsh 1997). Loss of terrestrial habitat in proximity to aquatic habitat is necessary to support the full life cycle of the western pond turtle (Spinks *et al.* 2003). Poor or inadequate terrestrial nesting habitat affects reproduction and recruitment and may preclude establishment of a self-sustaining population. Development may also remove habitat necessary for movement between suitable aquatic habitats, including instream and overland movement.

In addition to direct loss and alteration of habitat, western pond turtles are vulnerable to several adverse effects related to urbanization. Predation on hatchlings by introduced aquatic species (*e.g.*, bullfrogs, bass, and catfish), collection as pets, urban-related predation pressures (*e.g.*, dogs, raccoons, skunks, ravens, and crows), competition with non-native turtles (Holland 1991), contaminant spills, grazing, off-road vehicle use, and vehicle strikes on roads (Holland 1994) have all contributed to the sharp decline this species has experienced in recent decades. Invasion of exotic vegetation species, such as tamarisk, alters hydrology and channel morphology, which degrades pond turtle habitat. Increased moisture along habitat edges due to urban runoff, irrigation, or wet fuel modification zones may also affect nesting success because hard-shelled turtle eggs cannot expand in response to increased internal pressure in moist incubation substrates (Spinks *et al.* (2003).

Survey Results

The southwestern pond turtle has been documented in the Project area at several locations along the Santa Clara River and in the Salt Creek tributary during various field surveys conducted between 1996 and 2006 (**Figure 4.5-6**, Special-Status Wildlife Species Occurrences**)**. The San Marino Environmental Associates (SMEA 1995A) trapping results documented a substantial southwestern pond turtle population in this reach of the Santa Clara River. Aquatic Consulting Services, Inc. (2002A, 2002C, 2002D), observed the southwestern pond turtle during daytime walkover surveys conducted from May to September 2000 along the Santa Clara River near the Commerce Center Drive Bridge, Castaic Junction area, and west of the Project area just upstream of the Salt Creek confluence with the River and upstream of the Las Brisas Bridge. Additional incidental observations of southwestern pond turtle in the RMDP area have been made by Impact Sciences (2002) and Compliance Biology (2004D); within the Santa Clara River in the Entrada planning area by Impact Sciences, Inc. (2001), Ecological Sciences (2004A), and Dudek (Dudek and Associates 2006E); in lower Potrero Canyon (Carpenter 2009); and in Salt Creek by Dudek (Dudek and Associates 2006B). Dudek conducted general wildlife surveys, including specific habitat assessments for the southwestern pond turtle, between early November and late December of 2005 in the Salt Creek area (Dudek and Associates 2006B) and between May and August of 2006 in the Entrada planning area (Dudek and Associates 2006E). In both Dudek reports, the southwestern pond turtle was reported as present but population estimates were not provided. The lower Potrero Canyon observation, which was an adult basking on a bedrock ledge along the bank of a deeply incised plunge pool in the spring of 2004 (Carpenter 2009), and the several occurrences of the southwestern pond turtle just upstream of existing crossing of the River corridor at Potrero Canyon are significant. The existing crossing causes water to pond upstream, resulting in suitable deep water habitat for the pond turtle. In addition, lower Potrero Canyon is outside the 100-year floodplain of the River, contains perennial water flows, and supports substantial adjacent uplands that are suitable for nesting. Lower Potrero Canyon therefore appears to have suitable habitat to meet the life history needs of the species and may be important for nesting and as a refuge for hatchling and juvenile pond turtles. In addition, because it is outside the 100-year floodplain of the Santa Clara River, lower Potrero Canyon may provide an important refuge area for pond turtles in the River during severe flood conditions.

Based on a search of the CNDDB (CDFG 2007A) for the nine USGS 7.5-minute quadrangles including and bordering the Project area, there are seven other documented occurrences of the southwestern pond turtle in the Project region. Suitable wetland/riparian habitat for the southwestern pond turtle in the Project area includes bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, river wash, southern willow scrub, and shrub tamarisk, totaling 1,059 acres. The surveys indicate that the southwestern pond turtle is generally common in the Project area in the Santa Clara River and potentially could occur anywhere in the River corridor and its tributaries where there is sufficient permanent or

semi-permanent water with nearby suitable terrestrial nesting and overwintering sites. In addition to the River corridor, Potrero Canyon may be particularly important for this species, as described above. The surveys generally focused on aquatic habitats used by the southwestern pond turtle within the Project Area. However, focused nesting and overwintering surveys and studies in adjacent terrestrial habitats have not been conducted in the Project area; thus, inferences regarding the southwestern pond turtle's use of terrestrial habitats for nesting and overwintering in the Project area must be based on studies conducted elsewhere in southern California (*e.g.*, Rathbun *et al.* 1992; Holland 1994; Goodman 1997A).

Because use of terrestrial habitats outside the River corridor is not known and is likely linked to specific soil conditions and vegetative cover, the amount of suitable terrestrial habitat was not quantified for the purpose of the impact analysis. However, in order to analyze potential impacts to southwestern pond turtle refugia during severe flooding in the Santa Clara River, the portions of the River corridor within the Project area, as well as the reaches just upstream and downstream of the Project area, that would provide potential wet and dry refugia during 100-year storm events were delineated for Alternatives 2 through 7 do determine whether refugia would be available during extreme flood conditions. Wet refugia is defined as areas within the 100-year floodplain that would provide slow moving flow areas (< 2 fps) for pond turtles that would allow them to avoid the high flow areas that could wash them downstream. Dry refugia is defined as upland areas adjacent to the 100-year floodplain that would be available for pond turtles to escape severe flood events. Dry refugia includes natural habitat such as annual grassland, shrublands, and woodlands that may provide long-term refuge and agricultural lands that would provide temporary refuge. Dry refugia include areas immediately adjacent to the River corridor and the main tributaries south of the River corridor. The northern boundary for the dry refugia area is SR-126. It should be noted that these dry refugia areas were delineated based on immediate adjacency to and accessibility from the River corridor and gentle topography and are not intended to depict documented southwestern pond turtle use areas. For this reason, the refuge analysis is qualitative and not quantitative.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 88 acres of suitable wetland/riparian habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.3% of suitable habitat on site (**Figures 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 95 acres would be directly temporarily impacted. Implementation of the SCP would not affect this species.

Although almost 92% of suitable wetland/riparian habitat for the southwestern pond turtle would remain after construction of the RMDP facilities, and substantial wet and dry refugia habitat would remain (**Figure 4.5-120,** Potential Refugia for Southwestern Pond Turtle; Alternative 2 – 100 Year Flood Event), this species is declining throughout its range and even small losses of habitat are considered substantially adverse. Therefore, wetland/riparian and refugia habitat loss due to implementation of the RMDP would have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; and substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). In addition, under this alternative the Potrero Canyon Road Bridge across the Santa Clara River would be constructed and would permanently alter habitat upstream of the existing at-grade agricultural crossing (which creates suitable habitat in the River corridor). Bridge and road construction at the mouth of Potrero Canyon could also preclude pond turtles from using the lower portion of Potrero Canyon, where pond turtles have been observed and which may be important for nesting and use by hatchling and juvenile southwestern pond turtles, as well as provide dry refuge habitat during severe flooding in the River, such as a 100-year flood event. Direct permanent and temporary impacts (Loss of Habitat) would be significant and unavoidable, due to the construction of the Potrero Canyon Road Bridge.

Indirect Permanent Impacts

A total of 52 acres of suitable wetland/riparian habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 4.9% of suitable wetland/riparian habitat on site (**Figure 4.554**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). In addition to impacts to wetland/riparian habitat, build-out of the Specific Plan, VCC, and Entrada planning areas would result in substantial impacts to terrestrial habitats, including agriculture, bordering the Santa Clara River and Potrero Canyon. In addition to providing potential nesting and aestivation and

overwintering sites, these areas provide dry refugia habitat during severe flooding. **Figure 4.5-120**, Potential Refugia for Southwestern Pond Turtle; Alternative 2 – 100 Year Flood Event, illustrates the areas of both wet and dry refugia following build-out. Holland (1994) observed overwintering sites up to 1,640 feet from water and also reports that western pond turtles have been found up to 3,280 feet from watercourses and that they are capable of moving up to 3.1 miles between drainages. These longer movement distances indicate the potential use of terrestrial habitats outside the River corridor that would be affected by build-out of the Specific Plan, VCC, and Entrada planning areas. In particular, development of Homestead Village, Landmark Village, and Mission Village immediately adjacent to the River corridor would result in the loss of potential terrestrial and dry refugia habitat for the southwestern pond turtle.

In addition to loss of wetland and riparian habitat, impacts to terrestrial habitat resulting from build-out of the Specific Plan, VCC, and Entrada planning areas, the Project could substantially reduce suitable nesting, hibernation, and dispersal habitat for the species on site; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined and indirect permanent loss of suitable wetland/riparian habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 140 acres (13.2%). As described above for direct impacts, construction of the Potrero Canyon Road Bridge may result in the loss of suitable habitat for the pond turtle in the River corridor because the existing at-grade crossing that creates ponded areas would be removed. In addition, suitable refuge and nesting habitat and habitat for hatchlings and juveniles in lower Potrero Canyon would be affected, potentially precluding use of this important area. As described above for indirect impacts, build-out of the Specific Plan, VCC, and Entrada planning areas would also result in substantial impacts to terrestrial habitats (including agriculture) that could be used for nesting, aestivation, overwintering, and refuge bordering the Santa Clara River and Potrero Canyon (**Figure 4.5-54**). Because of the loss of suitable habitat at the Potrero Canyon crossing of the River and loss of refuge and potential nesting habitat in lower Potrero Canyon, as well as the large amount and percentage of terrestrial habitat loss, the combined direct and indirect permanent impacts could substantially reduce suitable habitat for the species on site; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number

or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant and unavoidable.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The southwestern pond turtle is a documented resident in the Santa Clara River, Salt Creek, and Potrero Canyon portions of the Project area and may occur within portions of the other tributary drainages. Implementation of the RMDP would require the construction of various facilities within the River corridor and adjacent upland areas and in Potrero Canyon in areas that support suitable habitat for the southwestern pond turtle. It is foreseeable that construction and/or grading activities associated with these facilities in both aquatic and terrestrial habitats could result in injury or mortality of southwestern pond turtles in the disturbance zone as a result of direct contact with construction equipment by adults, subadults, juveniles, hatchlings, and eggs in nests or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as the introduction of mud, silt, or chemical pollutants, may cause southwestern pond turtles to abandon the site and make them more vulnerable to impacts such as vehicle collisions and predation. Hatchlings, in particular, are extremely vulnerable to ravens and crows that are attracted to construction areas. Implementation of the SCP would not directly affect this species.

Because the southwestern pond turtle is a special-status species and declining throughout its range, the loss of any southwestern pond turtle individuals could have a substantial direct adverse effect on this species; cause the species to drop below self-sustaining levels on site; threaten to eliminate the species on site; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area, including substantial terrestrial areas that could be used for aestivation and overwintering. The build-out of the Specific Plan, VCC, and Entrada planning areas would include construction and/or grading activities in areas supporting suitable aquatic and terrestrial habitat for the southwestern pond turtle that could result in injury or mortality of individuals in the disturbance zone as a result of contact with construction equipment by adults, subadults, juveniles, hatchlings, and eggs in nests or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as the introduction of mud, silt, or chemical

pollutants, may cause southwestern pond turtles to abandon the site and make them more vulnerable to impacts such as vehicle collisions and predation. As a special-status species, the loss of any southwestern pond turtles could have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site; threaten to eliminate the species on site; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term construction-related secondary impacts resulting from implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas, include noise, ground vibration, dust, changes in hydrology, and adverse edge effects, such as increased human activity and nighttime illumination. Each of these potential impacts could result in habitat degradation or increased vulnerability of southwestern pond turtle individuals. Noise and ground vibration could flush individuals from refuge areas and increase their risk of vehicle collisions and predation. Dust may impair habitat quality and reduce insect and aquatic prey. Construction activities could disperse sediments and pollutants from construction sites into the Santa Clara River and affect on-site and downstream aquatic habitats used by southwestern pond turtles. Hydrologic and water quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. These factors could degrade habitat quality or otherwise alter habitat use and cause pond turtles to abandon these areas, potentially resulting in injury or mortality due to predation, vehicle collisions, and harassment. Nighttime illumination could expose southwestern pond turtle to nocturnal predators and general increases in human activity may alter behavioral activities such as foraging, basking, breeding, and nesting, thus impairing the general health of the turtles and potentially reducing their reproductive fitness. Implementation of the SCP would not affect this species.

Build-out of the Specific Plan, VCC, and Entrada planning areas could result in habitat fragmentation that may inhibit the movement of the southwestern pond turtle in the Project area, especially areas used by individuals to move into terrestrial habitats. Furthermore, implementation of the RMDP and the long-term occupancy of the Specific Plan, VCC, and Entrada planning areas could result in adverse secondary effects to southwestern pond turtles. The proximity of urban development to suitable southwestern pond turtle habitat could result in disruption of essential behavioral activities, including foraging, basking, nesting, and overwintering. Lighting associated with RMDP facilities (*e.g.*, bridges) could affect behavioral activities and increase the risk of predation by nocturnal predators. Other potential impacts include predation on hatchlings by introduced aquatic species (*e.g.*, bullfrogs, largemouth bass, and catfish); collection as pets; urban-related predation pressures (*e.g.*, cats, dogs, raccoons, skunks, ravens, and crows); competition with non-native turtles (Holland 1991); off-road vehicle

use; cattle grazing; increased incidence of vehicle collisions on roads (Holland 1994); use of pesticides, which could cause secondary poisoning and loss of prey; and invasion of exotic plant species, such as tamarisk, giant reed, and pampas grass. Establishment of exotic plant species may result in altered hydrology and channel morphology, which degrades southwestern pond turtle habitat. Increased moisture along habitat edges due to urban runoff, irrigation, or wet fuel modification zones may also affect nesting success. Although pond turtle eggs need some moisture to avoid desiccation, high subsurface moisture may be adverse because hard-shelled turtle eggs cannot expand in response to increased internal pressure (Spinks *et al.* 2003).

These short-term and long-term secondary impacts could have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable wetland/riparian habitat for the southwestern pond turtle (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 65 acres (6.2%) of permanent loss and 100 acres of temporary loss;
- Alternative 4 – 68 acres (6.4%) of permanent loss and 91 acres of temporary loss;
- Alternative 5 – 72 acres (6.8%) of permanent loss and 107 acres of temporary loss;
- Alternative 6 – 57 acres (5.4%) of permanent loss and 96 acres of temporary loss; and
- Alternative 7 – 14 acres (1.3%) of permanent loss and 72 acres of temporary loss.

Compared to Alternative 2, which would result in 88 acres (8.3%) of permanent loss and 95 acres of temporary impacts, the permanent loss of suitable wetland/riparian habitat would be substantially reduced under Alternatives 3 through 7. Temporary impacts would not be substantially different under Alternative 6 and would be somewhat reduced under Alternatives 3 and 4, substantially increased under Alternative 5, and substantially

reduced under Alternative 7. The large difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other reductions to the Project footprint under Alternative 7 that would result in substantially reduced permanent and temporary impacts to suitable habitat for southwestern pond turtle compared to the other alternatives.

The overall direct permanent loss and temporary impacts to suitable wetland/riparian habitat from implementation of the RMDP and the SCP under Alternative 5 would be somewhat reduced compared to the overall habitat loss under Alternative 2, and substantially reduced under Alternatives 3, 4, 6, and 7. In addition, compared to Alternative 2 where Potrero Canyon Road Bridge would block access to lower Potrero Canyon, access and use of this area would be less affected under Alternatives 3 through 7. However, because the southwestern pond turtle is uncommon and declining in its range, these impacts would still be significant under Alternatives 3 through 7, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable wetland/riparian habitat for the southwestern pond turtle (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 42 acres (3.9%) of permanent loss;
- Alternative 4 – 25 acres (2.4%) of permanent loss;
- Alternative 5 – 19 acres (1.8%) of permanent loss;
- Alternative 6 – 11 acres (1.0%) of permanent loss; and
- Alternative 7 – 7.2 acres (0.7%) of permanent loss.

Compared to Alternative 2, which would result in 52 acres (4.9%) of permanent loss of suitable wetland/riparian habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in reduced impacts to suitable habitat for southwestern pond turtle compared to the other alternatives.

Alternatives 3 through 7 would also result in substantial loss of dry refugia habitat compared to existing conditions (**Figures 4.5-121** through **4.5-124**, Potential Refugia for Southwestern Pond Turtle; Alternatives 3 through 7 – 100 Year Flood Event (note that Alternatives 3 and 4 are combined in **Figure 4.5-121** because available wet and dry refuge would be the same)), although both wet and dry refugia habitat would remain under all of the alternatives. Alternatives 3, 4, 5, and 6 would have similar amounts of dry refugia habitat following build-out and somewhat more than Alternative 2 due to reduced impacts north and south of the River corridor at Potrero Canyon. Alternative 7 would have substantially more dry refuge habitat compared to Alternatives 2 through 6 due to the smaller Landmark Village and Homestead Village project footprints.

Although Alternatives 3 through 7 would have reduced impacts to suitable wetland/ riparian and terrestrial/dry refuge habitat compared to Alternative 2, overall impacts would still be substantially adverse because of the relatively large amount of terrestrial/dry refuge habitat that would be lost adjacent to suitable wetland/riparian habitat along the Santa Clara River corridor and Potrero Canyon. Therefore, the indirect permanent loss of suitable habitat for the southwestern pond turtle occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable wetland/riparian habitat for the southwestern pond turtle:

- Alternative 3 – 107 acres (10.1%) of permanent loss;
- Alternative 4 – 93 acres (8.8%) of permanent loss;
- Alternative 5 – 91 acres (8.6%) of permanent loss;
- Alternative 6 – 68 acres (6.4%) of permanent loss; and
- Alternative 7 – 21 acres (2.0%) of permanent loss.

Compared to Alternative 2, which would result in 140 acres (13.2%) of combined direct and indirect permanent loss of suitable wetland/riparian habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other

Project footprint reductions under Alternative 7 that would result in reduced impacts to suitable habitat for the southwestern pond turtle compared to the other alternatives.

Alternatives 3 through 7 would affect substantial amounts of terrestrial/dry refuge habitat adjacent to the Santa Clara River corridor and Potrero Canyon, primarily due to build-out of the Project area. Therefore, the combined direct and indirect permanent loss of suitable habitat for the southwestern pond turtle occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3, 4, and 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual southwestern pond turtles as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only) and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the potential for such impacts would be successively reduced according to the successive reductions in impacts to terrestrial habitat under each alternative. The potential for impacts to terrestrial habitat occupied by the southwestern pond turtle would be substantially reduced under Alternative 7 because portions of the agricultural lands in the Landmark Village and Homestead East would not be developed. Nonetheless, impacts to southwestern pond turtle individuals occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2. Each alternative has similar short-term effects due to construction activities, such as potential impacts to hydrology and water quality, noise, ground vibration, dust, lighting, and increased human activity. Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in long-term secondary effects, such as nighttime lighting; human-caused habitat degradation, harassment, and collection; predation by pet, stray, and feral cats and dogs; invasive species; use of pesticides; and increased incidence of roadkill. Therefore, short-term and long-term secondary impacts to southwestern pond turtle resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to southwestern pond turtle: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint. Loss of suitable habitat under Alternative 2 would be significant and unavoidable, due to the loss of habitat which would result from the construction of Potrero Canyon Road Bridge, construction of lower Potrero Canyon Road, and realignment of Potrero Creek. This area provides important habitat for refuge during severe flood conditions in the River corridor, nesting habitat, and habitat for hatchlings and juveniles. Although Potrero Canyon Road Bridge would be constructed under Alternatives 5 and 6, the footprint of the bridge and associated road and reconstruction of Potrero Creek would such as to not preclude use of Potrero Canyon by southwestern pond turtles.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading and construction activities in floodplains, ponds and flowing water, and adjacent uplands, including injury and mortality due to direct contact with construction equipment, entombment of hibernating individuals or nests with eggs, and increased exposure of individuals flushed from habitat or left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within all riverbeds in proposed disturbance areas and within 500 feet of construction zones and access roads will be conducted by a qualified biologist at the appropriate season for the southwestern pond turtle. If detected, additional nesting surveys will be conducted in suitable nesting habitat typically within 1,300 feet of occupied riverbed habitat where ground-disturbing activities would occur. If occupied habitat, including nesting habitat, is documented, a monitoring plan will prepared and implemented to protect the southwestern pond turtle present during construction and submitted to CDFG for approval. The plan will include measures to avoid and minimize impacts to pond turtles. General procedures to avoid and minimize impacts to southwestern pond turtle during construction will be implemented and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species. General procedures to avoid and minimize impacts to southwestern pond turtle during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any additional encountered individuals. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the southwestern pond turtle. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment operating in ponds or flowing water; design of bridges, culverts, and other structures so as not to impair the movement of aquatic species; and protection of water quality from mud, silt, and other pollutants.

The combined permanent loss of suitable habitat for the southwestern pond turtle resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3

only), and Entrada planning areas would range from 21 acres (2.0%) under Alternative 7 to 140 acres (13.2%) under Alternative 2. Because this species is uncommon and declining in its range, this would be a substantial loss of suitable habitat and will reduce the size and distribution of the southwestern pond turtle population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result the protection of approximately 794 acres of suitable habitat for this species, primarily in the River Corridor SMA, but also within the High Country SMA and Salt Creek area (**Figure 4.5-3**). In addition, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. Following build-out, the River Corridor floodplain would remain 1,000 to 2,000 feet wide and retain the mosaic of habitats, including the relatively narrow wetted channel, benches, and dry terraces that would support the life history of the southwestern pond turtle. Under all alternatives there would also be substantial upland habitat adjacent to the 100-year floodplain of the River Corridor SMA available for the southwestern pond turtle during severe flood conditions. **Figures 4.5-120** through **4.5-124,** Potential Refugia for Southwestern Pond Turtle; Alternatives 2 through 7 – 100 Year Flood Event, show that under each of the alternatives there would be both natural habitat areas that provide upland habitat and agricultural areas that could provide refuge for southwestern pond turtle along both sides of the River Corridor SMA during severe flood conditions. These refuge areas include undisturbed habitat, restored habitat areas, the 100-foot wide vegetated transition area between the top of the river side of bank stabilization and adjacent development, and man-made Open Area at the mouths of various tributaries to the River Corridor SMA such as Ayers, Dead-End, Exxon, Humble, and Long canyons. As described above, however, due to construction of the Potrero Canyon Road Bridge, associated lower Potrero Canyon Road, and realignment of Potrero Creek under Alternatives 2, the refuge area and potential nursery site for pond turtle in lower Potrero Canyon would be removed. A large area of upland refuge within the protected Salt Creek Canyon would be available. These mitigation measures for loss of habitat will reduce significant impacts to a level that is adverse but not significant for Alternatives 3, 4, 5, 6, and 7. Due to construction of the Potrero Canyon Road Bridge, associated lower Potrero Canyon Road, and realignment of Potrero Creek and consequent loss of habitat in the River corridor and lower Potrero Canyon, these mitigation measures would not be sufficient to reduce the loss of habitat to a level less than significant for Alternative 2; therefore, loss of habitat under Alternative 2 would remain significant.

With respect to secondary effects, any southwestern pond turtles occupying habitat in close proximity to construction zones may be disturbed by construction activities, including noise, ground vibration, dust, and lighting. Noise and ground vibration could cause individuals to

abandon refuge areas and expose them to predators (especially hatchlings to crows and ravens), adverse environmental conditions, and increase their chance of injury or mortality from construction equipment and vehicles. Dust may adversely affect water quality and their insect and aquatic prey. Nighttime lighting could expose pond turtles to nocturnal predators. Aquatic habitat, including downstream areas, could be disturbed during construction by hydrologic alterations and pollutants that impair water quality, thus adversely affecting habitat quality and prey for this species. The pre-construction surveys and monitoring plan, will help avoid and minimize secondary impacts during construction. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce the potential effects of ground vibration and dust. Any southwestern pond turtles detected during construction will be relocated by a qualified biologist holding a Scientific Collecting Permit per the requirements of the monitoring plan. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, protection of downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; invasive species such as giant reed; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in, or adjacent to, open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All specific mitigation measures for southwestern pond turtle are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-46 IMPACTS TO INDIVIDUALS – SOUTHWESTERN POND TURTLE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified four mitigation measures that will avoid, minimize, or mitigate the loss of southwestern pond turtle individuals through pre-development surveys and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce impacts to southwestern pond turtle individuals. Foremost, pre-construction coordination, focused surveys for southwestern pond turtle, and biological monitoring will be conducted to avoid and reduce impacts. Several other general mitigation measures address potential impacts to wetland/riparian habitats, such as hydrologic alterations and water quality impacts that could adversely affect southwestern pond turtles.

BIO-50 requires preconstruction surveys at the appropriate season for southwestern pond turtle prior to initiating construction for installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the Santa Clara River riverbed and all riverbed areas within 500 feet of construction sites and access roads. If detected in or adjacent to the Project area, nesting surveys will be conducted in or adjacent to the Project area where ground-disturbing activities will occur when suitable nesting habitat is present within 1,300 feet of occupied habitat. If the southwestern pond turtle is present, the applicant will prepare and implement a monitoring plan submitted to CDFG that includes the following key elements: (1) measures to relocate pond turtles; (2) habitat and conditions at the proposed relocation sites; (3) methods used to trap and relocate individuals; (4) record keeping for number of individuals relocated; (5) measures to avoid nesting areas, or to minimize impacts to nesting areas if complete avoidance is not feasible; (6) restrictions on moving eggs or hatchlings without CDFG written authorization; (7) biological monitoring during all periods where construction activities occur adjacent to or within occupied habitat; and (8) daily clearance surveys prior to construction.

Additional general measures, as follows, will be implemented to help avoid and minimize impacts to southwestern pond turtle individuals.

The following three mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the southwestern pond turtle and other semi-aquatic species.

BIO-46 states that, during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present, and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded southwestern pond turtle.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to southwestern pond turtle individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-47 LOSS OF HABITAT – SOUTHWESTERN POND TURTLE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for southwestern pond turtle through habitat protection, restoration and enhancement, and management.

SP-4.6-55 and SP-4.6-58, as described above, will also mitigate for loss of habitat as a result of compliance with state and federal permits related to wetlands and water quality.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. In addition to providing a buffer between the development edge and wetland/riparian habitat in the River Corridor SMA, these transition areas will provide potential aestivation and overwintering habitat for the southwestern pond turtle. They may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system totaling approximately 6,100 acres that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the southwestern pond turtle. These measures refer to habitat protection, restoration and enhancement, and management

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, loss of habitat for the southwestern pond turtle would remain significant. Therefore, implementation of Alternative 2 creates significant and unavoidable impacts.

After mitigation, the loss of habitat for the southwestern pond turtle would be adverse but not significant for Alternatives 3, 4, 5, 6, and 7 because these alternatives would minimize loss of habitat in the River corridor and lower Potrero Canyon.

IMPACT 4.5-48 SECONDARY IMPACTS – SOUTHWESTERN POND TURTLE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for short-term secondary impacts to the southwestern pond turtle, such as altered hydrology and water quality, inadvertent impacts to suitable habitat adjacent to construction zones, and noise and increased human activity. Mitigation measures to offset long-term secondary impacts, such as habitat fragmentation; nighttime lighting; invasive plant species; increased human activity; increased predation by pet, stray, and feral cats and dogs and other mesopredators; and other sources of habitat degradation (*e.g.*, grazing) were also identified**.**

In order to mitigate impacts from contact with chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature during construction, the

Newhall Ranch Specific Plan Program EIR identified SP-4.6-55 and SP-4.6-58, as described above.

In order to avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA. These measures, in combination with SP-4.6-53 and SP-4.6-59, which require pre-development surveys as described above, will also help reduce the effects of noise and increased human activity. However, these mitigation measures primarily are designed to minimize impacts to off-site resources and alone will not completely mitigate noise and human activity impacts. Because of the infeasibility of locating aestivating and overwintering individuals prior to construction, long-term mitigation measures relating to habitat preservation and management will contribute to the persistence of the species on site and offset these short-term impacts from noise.

The following mitigation measures address the long-term secondary effects listed above. The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that primarily address habitat fragmentation, increased predation by mesopredators, increased human populations and recreation in close proximity to open space and wetland/riparian and terrestrial aestivation/overwintering habitat for the southwestern pond turtle, nighttime lighting, and other activities that could result in degradation of habitat, such as cattle grazing.

SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which relate to the protection, restoration and enhancement, and management of the River Corridor SMA and High Country SMA, will prevent habitat fragmentation and increased predation by mesopredators (by ensuring the continued presence of top predators such as coyotes) and will offset the impacts of increased human activity and grazing in the Project area.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19, described above, address the transition area between development and the River Corridor SMA that will both buffer the River Corridor SMA from adverse edge effects and provide potential aestivation/overwintering habitat for the southwestern pond turtle.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or

off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

In order to mitigate impacts from grazing, SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional measures to mitigate for secondary impacts to southwestern pond turtle, including short-term impacts to hydrology and water quality, dust, and noise and ground vibration, and long-term impacts, such increased human activity; habitat degradation from exotic plants; predation by pet, stray, and feral cats and dogs and mesopredators; and increased predation by invasive exotic species, such as bullfrogs.

BIO-50, described in detail above, in conjunction with BIO-52 described above, will help reduce secondary impacts related to construction by ensuring that occupied habitat areas, including nesting areas, are documented prior to construction and monitored during construction such that inadvertent impacts to individuals and occupied habitat do not occur. This would include monitoring construction activities adjacent to occupied habitat so that potential impacts resulting from increased human activity, noise and ground vibration, dust, and lighting do not occur or are minimized to the extent feasible.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and BIO-70, as summarized above, will be implemented. In addition, BIO-44, BIO-45, BIO-47, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for southwestern pond turtle during construction.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 describes preparation of a plan and mitigation measures be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to the southwestern pond turtle. The plan will provide guidelines for collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

Several mitigation measures will mitigate impacts from habitat fragmentation, predation by mesopredators, invasive plant species, and long-term increases in human activity and its associated effects.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above and which refer to habitat protection, restoration and enhancement, and management in the High Country SMA and Salt Creek area, will mitigate for habitat fragmentation effects, including predation by mesopredators, by providing for a large, interconnected open space system.

BIO-63 will be implemented to mitigate impacts from predation by pet, stray, and feral cats and dogs. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of aquatic habitat and potential secondary poisoning and loss of prey by pesticides, and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA regarding wildlife species and install signage to keep people and their animals on existing trails.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72 will mitigate for invasive plant species. This measure specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the southwestern pond turtle and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

TWO-STRIPED GARTER SNAKE (CSC)

Life History

The two-striped garter snake (*Thamnophis hammondii*) is found in coastal California in the vicinity of the southeast slope of the Diablo Range and the Salinas Valley south along the Coastal and Transverse ranges to Rio Rosario in Baja California, Mexico (NatureServe 2007). Although the two-striped garter snake was historically common throughout this range and is the most common garter snake in southern California's cismontane region (Schwenkmeyer 2007), it is now abundant only in eastern San Diego County. The two-striped garter snake has been displaced from about 40% of its historical range (NatureServe 2007). Populations have been affected by the elimination of natural sloughs and wetlands, loss of riparian habitat due to agriculture and urbanization, predation by non-native bullfrogs, fish, and feral pigs, and loss of amphibian prey.

Two-striped garter snakes are found in a variety of perennial and intermittent freshwater streams within oak woodlands, shrublands, and sparse coniferous forests from sea level to 2,400 meters (7,874 feet) AMSL (Stebbins 2003; Zeiner *et al.* 1988). They are restricted to streams, vernal pools, lakes, and stock and artificial ponds with good adjoining riparian vegetation (Jennings and Hayes 1994; Schwenkmeyer 2007) and are commonly found within wetlands and streams having rocky or sandy beds with willows (*Salix* sp.) or dense vegetation (Zeiner *et al.* 1988). Two-striped garter snakes tend to stay near water, entering it often and retreating to it when alarmed (Stebbins 2003). They use dense vegetation, flat rocks, rocky outcrops, and rotting logs as cover (Zeiner *et al.* 1988). The species tends to avoid open expanses because of increased risk of predation.

Two-striped garter snakes stay close to water in the warmer months but may occur farther from water during cooler months. They are generally active aquatic hunters during the day, but retreat into crevices, mammal burrows, or other upland shelters at night (SMEA 1995A). Their summer and winter ranges can be quite variable, with a summer streamside range of about 50 to 5,000 square meters (0.01 to 1.2 acres) and a median range of 1,500 square meters (0.4 acre). Their winter range in coastal scrub and grasslands in upland areas adjacent to riparian areas is about 50 to 9,000 square meters (0.01 to 2.2 acres), with a median range of 3,400 square meters (0.8 acre) (Jennings and Hayes 1994). Their median summer range of 1,500 square meters can support approximately seven individuals, while their winter range of 3,400 square meters can support approximately three individuals (Zeiner *et al.* 1988).

This typically diurnal snake is most active in mornings and nights of warm days and warm afternoons of cooler days (Zeiner *et al.* 1988). The two-striped garter snake generally retreats to communal hibernation burrows as the days shorten, generally in October but depending on latitude and elevation (Jennings and Hayes 1994). Occasionally, individuals will emerge from hibernation on warmer days to bask in the sun. Two-striped garter snakes in higher elevations,

inland, and in colder areas of southern California hardly emerge from their hibernation dens (Zeiner *et al.* 1988). Hibernation lasts until March, when the males emerge first and prepare for mating.

Two-striped garter snakes forage in and along streams and near quiet pools of water (Zeiner *et al.* 1988). They prey on small fish, fry, and eggs (*Cottus* sp., *Eucyclogobius* sp., *Gasterosteus* sp., *Oncorhynchus* sp.), frogs and toads (*Buto* sp., *Rana* sp., *Pseudacris* sp.), newts (*Taricha* sp.), leeches and earthworms (*Annelida*), and insect larvae (*Anthropoda*) (Jennings and Hayes 1994).

Both male and female two-striped garter snakes may breed with several partners, but not all females mate. Sexually mature females may store sperm for up to 53 months and give birth without having mated that season (Jennings and Hayes 1994). After mating occurs in upland sites, two-striped garter snakes disperse to summer feeding areas. After a nine-week gestation period, gravid females bear one to 36 live young during the late summer in or under loose bark, rotting logs, and dense vegetation (Stebbins 2003; Jennings and Hayes 1994; Schwenkmeyer 2007; Zeiner *et al.* 1988).

In addition to direct loss of habitat, two-striped garter snakes are vulnerable to several effects related to urban development. Large reservoirs, cement-lined stream channels, flood control projects, and barriers to dispersion such as highways, highway obstructions, densely urbanized areas, and areas dominated by buildings and pavement, all impede the life cycle and natural movements of the garter snake (Jennings and Hayes 1994; NatureServe 2007). Predation by non-native bullfrogs and fish, and possibly by African clawed frogs, may contribute to the decline of two-striped garter snake. Two-striped garter snake may also have to compete with introduced species, such as mosquitofish, that prey on the eggs and young of prey taken by two-striped garter snake (*e.g.*, newts, frogs, and toads) (Goodsell and Kats 1999).

Survey Results

The two-striped garter snake has been observed during various surveys in the reach of the Santa Clara River within and adjacent to the Specific Plan area (Aquatic Consulting Services 2002C; Impact Sciences 2002; Compliance Biology 2004; ENTRIX 2006B), within the Entrada planning area (Impact Sciences 2001), and within the VCC planning area (Ecological Sciences 2003A). Other focused surveys completed for this species in the Project vicinity include the following:

- SMEA (1995A) found no two-striped garter snake samples over 127 trap days during special-status aquatic species surveys in the Santa Clara River and San Francisquito Creek.
- SMEA (1995A) found appropriate habitat on the Santa Clara River from Bouquet Canyon Bridge downstream to the west boundary of the study area and noted a healthy downstream population between McBean Parkway and I-5.

- RECON (1999B) determined there was potential habitat for the two-striped garter snake throughout the Project area along the Santa Clara River during a Santa Clara River Corridor Habitat Assessment.
- Aquatic Consulting Services, Inc. (2000A, 2000B, 2000D), found no samples of the two-striped garter snake in the Castaic Junction and Commerce Center Bridge project areas.
- Dudek (Dudek and Associates 2006B) found there was a high potential for the species to occur based on the presence of stream, creek, pool, stream with rocky beds, pond, lake, and vernal pool habitat during surveys in the High Country SMA and Salt Creek areas.

Based on these survey results, a breeding population of two-striped garter snake is likely present in the Project area. Additionally, two-striped garter snake is likely to be found in portions of the Santa Clara River downstream of the Project area. Because two-striped garter snake has been documented to occur in the Santa Clara River and Castaic Creek in the Project area, it is assumed to be present on site within riparian habitat.

Bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, river wash, southern willow scrub, and shrub tamarisk vegetation communities are suitable habitat for the two-striped garter snake. There is a total of 1,059 acres of suitable wetland/riparian habitat in the Project area. This species is also expected to occur sporadically in terrestrial (upland) vegetation communities in the winter adjacent to wetland/riparian habitats, but this potential habitat was not quantified. Locations of two-striped garter snake hibernation dens on site are not known.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 88 acres of suitable wetland/riparian habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.3% of the suitable habitat on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 95 acres would be temporarily impacted.

Almost 92% of suitable wetland/riparian habitat for the two-striped garter snake would remain after construction of the RMDP facilities. However, during construction, this species could be displaced from suitable habitat and adverse effects on movement of the species along the River corridor or into adjacent terrestrial habitats due to loss of habitat could occur. In particular, under Alternatives 2, 5 and 6, which include construction of the Potrero Canyon Road Bridge across the Santa Clara River, construction at the mouth of Potrero Creek could affect movement by two-striped garter snake between the River corridor and suitable habitat in lower Potrero Creek. Implementation of the SCP would not directly affect this species. Due to loss of suitable wetland/riparian habitat, implementation of the RMDP would have a substantial direct adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 52 acres of suitable wetland/riparian habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 4.9% of the suitable wetland/riparian habitat on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). In addition to impacts to wetland/riparian habitat, build-out of the Specific Plan, VCC, and Entrada planning areas would result in substantial impacts to terrestrial habitats bordering the Santa Clara River and Potrero Canyon.

Primarily due to build-out of the Specific Plan, VCC, and Entrada planning areas, the Project could substantially reduce suitable terrestrial habitat for the species on site; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable wetland/riparian habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 140 acres (13.2%). As described above for indirect impacts, build-out of the Specific Plan, VCC, and Entrada planning areas would result in substantial impacts to terrestrial habitats bordering the Santa Clara River and Potrero Canyon that could be used for winter hibernation (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). Because of the large amount of terrestrial habitat loss, the combined direct and indirect permanent impacts could substantially reduce suitable habitat for the species on site; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The two-striped garter snake is a documented resident in the Santa Clara River corridor and suitable habitat for this species also occurs in Salt Creek and Potrero canyons on the south side of the River. Implementation of the RMDP would require the construction of various facilities within the River corridor and adjacent upland areas and in Potrero Canyon in areas that support suitable habitat for the two-striped garter snake. It is foreseeable that construction and/or grading activities associated with these facilities in both aquatic and terrestrial habitats could result in injury or mortality of two-striped garter snakes in the disturbance zone as a result of direct contact of adults and juveniles with construction equipment or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as by introduction of mud, silt, or chemical pollutants, may cause two-striped garter snakes to abandon the site and make them more vulnerable to impacts such as vehicle collisions and exposure to predators and harsh environmental conditions. Implementation of the SCP would not directly impact this species.

Because they are a special-status species and declining in their range, the loss of any two-striped garter snakes could have a substantial direct adverse effect on this species; cause the species to drop below self-sustaining levels on site; threaten to eliminate the species on site; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area, including substantial terrestrial areas that could be used for winter hibernation. The build-out of the Specific Plan, VCC, and Entrada planning areas would include construction and/or grading activities in areas supporting suitable aquatic and terrestrial habitat for the two-striped garter snake, which could result in injury or mortality of individuals in the disturbance zone as a result of contact of adults and juveniles with construction equipment or by entombment as a result of grading activities. In addition, construction and/or grading activities that result in degradation of aquatic habitats, such as by introduction of mud, silt, or chemical pollutants, may cause two-striped garter snakes to abandon the site and make them more vulnerable to impacts such as vehicle collisions and exposure to predators and harsh environmental conditions. Therefore, there is a potential for impacts to two-striped garter snake adults and juveniles during construction and/or grading activities associated with the build-out of the Specific Plan, VCC, and Entrada planning areas. Because they are a special-status species and declining in their range, the loss of any two-striped garter snakes could have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site; threaten to eliminate the species on site; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in construction-related ground vibration that may flush individuals, if present, from refuge areas and expose them to predators and potentially harsh environmental conditions (*e.g.* hot, dry weather). Short-term construction activities also could generate dust and disperse sediments and pollutants from construction sites into the Santa Clara River and affect on-site and downstream two-striped garter snake populations. Hydrologic and water quality-related impacts could include chemical pollution, increased turbidity, excessive sedimentation, flow interruptions, and changes in water temperature due to short-term changes to the active channel morphology. Construction-related dust could impair water quality and reduce available prey. These factors could result in substantial impacts to two-striped garter snakes and/or the degradation of habitat quality. Other construction-related secondary impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could include disruptions to behavioral activities associated with increased human activity. Implementation of the SCP would not result in secondary impact to this species.

Build-out of the Specific Plan, VCC, and Entrada planning areas could result in habitat fragmentation that could inhibit the movement of the two-striped garter snake in the Project area, especially in areas used by individuals to move into terrestrial habitats. Furthermore, implementation of the RMDP and the long-term occupancy of the Specific Plan, VCC, and Entrada planning areas could result in adverse secondary effects to two-striped garter snakes. The proximity of urban development to suitable two-striped garter snake habitat could result in disruption of essential behavioral activities, including foraging, breeding, and hibernation. Other potential impacts include predation by introduced invasive species (*e.g.*, Argentine ants, bullfrogs, and exotic fish); collection as pets; urban-related predation pressures (*e.g.*, by cats, dogs, raccoons, skunks, ravens, and crows); off-road vehicle use; cattle grazing; increased incidence of vehicle collisions on roads (Holland 1994); use of pesticides, which may cause secondary poisoning and loss of prey; and invasion of exotic plant species, such as tamarisk, giant reed, and pampas grass, which may cause altered hydrology and channel morphology, thus degrading two-striped garter snake habitat.

These short-term and long-term secondary impacts could have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable wetland/riparian habitat for the two-striped garter snake (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 65 acres (6.2%) of permanent loss and 100 acres of temporary loss;
- Alternative 4 – 68 acres (6.4%) of permanent loss and 91 acres of temporary loss;
- Alternative 5 – 72 acres (6.8%) of permanent loss and 107 acres of temporary loss;

- Alternative 6 – 57 acres (5.4%) of permanent loss and 96 acres of temporary loss; and
- Alternative 7 – 14 acres (1.3%) of permanent loss and 72 acres of temporary loss.

Compared to Alternative 2, which would result in 88 acres (8.3%) of permanent loss and 95 acres of temporary impacts, the permanent loss of suitable wetland/riparian habitat would be substantially reduced under Alternatives 3 through 7. Temporary impacts would be not be substantially different under Alternative 6, somewhat reduced under Alternative 4, somewhat to substantially increased under Alternatives 3 and 5, and substantially reduced under Alternative 7. The large difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other reductions to the Project footprint under Alternative 7 that would result in substantially reduced permanent impacts to suitable wetland/riparian habitat for the two-striped garter snake compared to the other alternatives.

Habitat loss due to implementation of the RMDP under Alternatives 3 through 6 would be similar in magnitude compared to the habitat loss under Alternative 2, but would be substantially less under Alternative 7. Although under all alternatives permanent habitat loss would be low, ranging from 14 acres under Alternative 7 to 88 acres under Alternative 2, the impacts could still result in displacement of the two-striped garter snake from suitable habitat and affect its movement within the Project area. The direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation, for Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable wetland/riparian habitat for the two-striped garter snake (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 42 acres (3.9%) of permanent loss;
- Alternative 4 – 25 acres (2.4%) of permanent loss;
- Alternative 5 – 19 acres (1.8%) of permanent loss;
- Alternative 6 – 11 acres (1.0%) of permanent loss; and
- Alternative 7 – 7.2 acres (0.7%) of permanent loss.

Compared to Alternative 2, which would result in 52 acres (4.9%) of permanent loss of suitable wetland/riparian habitat, Alternatives 3 through 7 would have reduced impacts.

Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in reduced impacts to suitable wetland/riparian habitat for the two-striped garter snake compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts to suitable wetland/ riparian habitat compared to Alternative 2, overall impacts would still be substantially adverse because of the relatively large amount of terrestrial habitat that would be lost adjacent to suitable wetland/riparian habitat along the Santa Clara River corridor and Potrero Canyon. Therefore, the indirect permanent loss of suitable habitat for the two-striped garter snake occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable wetland/riparian habitat for the two-striped garter snake:

- Alternative 3 – 107 acres (10.1%) of permanent loss;
- Alternative 4 – 93 acres (8.8%) of permanent loss;
- Alternative 5 – 91 acres (8.6%) of permanent loss;
- Alternative 6 – 68 acres (6.4%) of permanent loss; and
- Alternative 7 – 21 acres (2.0%) of permanent loss.

Compared to Alternative 2, which would result in 140 acres (13.2%) of combined direct and indirect permanent loss of suitable wetland/riparian habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the two-striped garter snake compared to the other alternatives. Because each of the alternatives would also affect substantial amounts of terrestrial habitat adjacent to

the Santa Clara River corridor and Potrero Canyon, the combined direct and indirect permanent loss of suitable habitat for the two-striped garter snake occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual two-striped garter snakes as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the potential for such impacts would be successively reduced due to the successive reductions in impacts to terrestrial habitat under each alternative. The potential for impacts to terrestrial habitat occupied by the two-striped garter snake would be substantially reduced under Alternative 7 because portions of the agricultural lands in Landmark Village and Homestead East would not be developed. Nonetheless, impacts to individual two-striped garter snakes occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2. Each alternative has similar short-term effects from construction activities, such as ground vibration and potential impacts to hydrology and water quality, construction-related dust, and increased human activity. Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in long-term secondary effects, such as human-caused habitat degradation, harassment, and collection; predation by pet, stray, and feral cats and dogs; invasive wildlife species; increased incidence of roadkill; and use of pesticides.

Because this species is declining in its range, these short-term and long-term secondary impacts could have a substantial adverse effect on the two-striped garter snake; could substantially reduce the habitat of the species on site or rangewide; could cause the species to drop below self-sustaining levels on site or rangewide; could threaten to eliminate the species on site or rangewide; or could substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to two-striped garter snake: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading and construction activities in ponds and flowing water, including injury and mortality due to direct contact with construction equipment, entombment of hibernating individuals, and increased exposure of individuals flushed from habitat or left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys will be conducted in the riverbed and all riverbed areas within 500 feet of the construction zone and access roads at the appropriate season for two-striped garter snake (April 1 to September 1). Any detected individuals will be relocated to suitable pre-approved locations identified in a Relocation Plan prepared by the applicant and approved by CDFG. General procedures to avoid and minimize impacts to two-striped garter snake during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any additional encountered individuals. Clearance surveys will be conducted each day prior to construction. Several general measures will be implemented to protect wetland habitats, which will reduce impacts to the two-striped garter snake. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment operating in ponds or flowing water; design of bridges, culverts, and other structures so as not to impair the movement of aquatic species; and protection of water quality from mud, silt, and other pollutants.

The combined permanent loss of suitable habitat for the two-striped garter snake resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 21 acres (2.0%) under Alternative 7 to 140 acres (13.2%) under Alternative 2. Because this species is uncommon and declining in its range, this would be a substantial loss of suitable habitat and will reduce the size and distribution of the two-striped garter snake population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result the protection of approximately 794 acres of suitable habitat for this species, primarily in the River Corridor SMA, but also within the High Country SMA and Salt Creek area (**Figure 4.5-3**). In addition, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical analysis further determined

that the River would still retain sufficient width to allow natural fluvial processes to continue. Following build-out, the River Corridor floodplain would remain 1,000 to 2,000 feet wide and retain the mosaic of habitats, including the relatively narrow wetted channel, benches, and dry terraces that would support the life history of the two-striped garter snake. Under all alternatives there would also be substantial upland habitat adjacent to the 100-year floodplain of the River Corridor SMA available for the two-striped garter snake during severe flood conditions. An analysis of dry and wet refugia prepared for the southwestern pond turtle, and depicted in **Figures 4.5-120** through **4.5-124,** Alternatives 2 through 7 Potential Refugia for Southwestern Pond Turtle, show that for each of the alternatives there would be both natural habitat areas that provide upland habitat and agricultural areas that could provide refuge for two-striped garter snake along both sides of the River Corridor SMA area during severe flood conditions. These refuge areas include undisturbed habitat, bank stabilization habitat areas, the 100-foot wide transition area between the top of the river side of bank stabilization and adjacent development, and man-made Open Area at the mouths of various tributaries to the River Corridor SMA such as Ayers, Dead-End, Exxon, Humble, Long, and Potrero canyons. A large area of upland refuge within the protected Salt Creek Canyon would also be available.

With respect to secondary effects, any two-striped garter snakes occupying habitat in close proximity to construction zones may be disturbed by construction activities, including ground vibration and dust. Ground vibration could cause individuals to emerge from burrows and other refuge areas and expose them to predators, adverse environmental conditions, and increase their chance of injury or mortality from construction equipment and vehicles. Dust may adversely affect water quality and their insect prey. Aquatic habitat, including downstream areas, could be disturbed during construction by hydrologic alterations and pollutants that impair water quality, thus adversely affecting habitat quality and prey for this species. Pre-construction surveys to relocate individuals found within 500 of construction areas and access roads, daily clearance surveys, biological monitoring during vegetation clearing and grading in and adjacent to occupied habitat, as well as dust suppression measures, will help reduce the potential effects of ground vibration and dust. Any two-striped garter snakes detected prior to or during construction will be relocated to identified suitable habitat by a qualified biologist holding a Scientific Collecting Permit according to a CDFG-approved Relocation Plan. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, protection of downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; invasive species, including Argentine ant and invasive plants such as giant reed; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas.

Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All specific mitigation measures for two-striped garter snake are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-49 IMPACTS TO INDIVIDUALS – TWO-STRIPED GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified four mitigation measures that would avoid, minimize, or mitigate the loss of two-striped garter snake individuals through pre-development surveys and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce impacts to two-striped garter snake individuals. Most of these mitigation measures address potential impacts to wetland/riparian habitats, such as hydrologic alterations and water quality impacts that could adversely affect two-striped garter snakes. In addition, pre-construction coordination, focused surveys for two-striped garter snake, and biological monitoring will be conducted to reduce impacts.

BIO-89 requires preconstruction surveys at the appropriate season (April 1 to September 1) for two-striped garter snake prior to initiating construction for installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the Santa Clara River riverbed and all riverbed areas within 300

feet of construction sites and access roads. Any detected individuals will be relocated to suitable pre-approved locations identified in a Relocation Plan prepared by the applicant and approved by CDFG. The Relocation Plan will include several key elements: (1) timing and location of surveys, including areas where more intensive surveys should be done; (2) trapping/capture and relocation methods; and (3) procedures for recordkeeping of the number of individuals relocated. A qualified biologist will be present during all construction activities within or adjacent to occupied habitat and clearance surveys will be conducted daily in this habitat before onset of construction activities.

The following mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the two-striped garter snake and other semi-aquatic species.

BIO-46 states that during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present, and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded two-striped garter snakes.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to two-striped garter snake individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-50 LOSS OF HABITAT – TWO-STRIPED GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for two-striped garter snake through habitat protection, restoration and enhancement, and management. SP-4.6-55 and SP-4.6-58, as described above, will also mitigate for loss of habitat as a result of compliance with state and federal permits related to wetlands and water quality.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. In addition to providing a buffer between the development edge and wetland/riparian habitat in the River Corridor SMA, these transition areas will provide potential winter habitat for the two-striped garter snake. They may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system totaling approximately 6,100 acres that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the two-striped garter snake. These measures refer to habitat protection, restoration and enhancement, and management

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the two-striped garter snake would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-51 SECONDARY IMPACTS – TWO-STRIPED GARTER SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for short-term construction-related secondary impacts to the two-striped garter snake, such as altered hydrology and water quality; and inadvertent impacts to suitable habitat adjacent to construction zones as well as increased human activity. Mitigation measures to offset long-term secondary impacts, such as habitat fragmentation; invasive plant species; increased human activity; increased predation by pet, stray, and feral cats and dogs and other mesopredators; and other sources of habitat degradation (*e.g.*, grazing), were also identified**.**

In order to mitigate impacts from contact with chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature during construction, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-55 and SP-4.6-58, as described above. In order to avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These measures require that all grading perimeters

within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA. These measures, in combination with SP-4.6-53 and SP-4.6-59, which require pre-development surveys as described above, will also help reduce the effects of increased human activity. However, these mitigation measures are primarily designed to minimize impacts to off-site resources and alone will not completely mitigate human activity impacts. Because of the infeasibility of locating hibernating individuals prior to construction, long-term mitigation measures relating to habitat preservation and management will contribute to the persistence of the species on site and offset these short-term impacts.

The following mitigation measures address the long-term secondary effects listed above. The Newhall Ranch Specific Plan Program EIR identified the several mitigation measures that primarily address habitat fragmentation, increased predation by mesopredators, increased human populations and recreation in close proximity to open space and wetland/riparian and terrestrial winter habitat for the two-striped garter snake, and other activities that could result in degradation of habitat, such as cattle grazing.

SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which relate to the protection, restoration and enhancement, and management of the River Corridor SMA and High Country SMA, will prevent habitat fragmentation and increased predation by mesopredators (by ensuring the continued presence of top predators, such as coyotes) and will offset the impacts of grazing and increased human activity in the Project area.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19, as described above, address the transition area between development and the River Corridor SMA that will both buffer the River Corridor SMA from adverse edge effects and provide potential winter habitat for the two-striped garter snake.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

In order to mitigate impacts from grazing, SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country

SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to two-striped garter snake, including construction-related dust, ground vibration, short-term impacts to hydrology and water quality and long-term impacts, such as increased human activity; habitat degradation from exotic plants; predation by pet, stray, and feral cats and dogs and mesopredators; and increased predation by invasive exotic species, such as Argentine ants and bullfrogs.

BIO-89, as described above, requires preconstruction surveys for two-striped garter snake prior to initiating construction activities within 500 feet of construction sites and access roads, as well as daily clearance surveys prior to construction. Detected individuals will be relocated to suitable pre-approved locations identified in a CDFG-approved Relocation Plan. These measures will minimize adverse secondary effects such as ground vibration and dust on the two-striped garter snake because individuals would be removed from the general construction area.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and BIO-70, as summarized above, will be implemented. In addition, BIO-44, BIO-45, BIO-47, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for two-striped garter snake during construction.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope

runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 describes preparation of a plan and mitigation measures be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to the two-striped garter snake. The plan will provide guidelines for collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

Several mitigation measures will mitigate impacts from habitat fragmentation, increased predation by mesopredators, invasive plant species, and long-term increases in human activity and its associated effects.

BIO-1 through BIO-16 and BIO-19, as described above and which refer to habitat protection, restoration and enhancement, and management in the High Country SMA and Salt Creek area, will mitigate for habitat fragmentation effects, including increased predation by mesopredators, by providing for a large, interconnected open space system.

BIO-63 will be implemented to mitigate impacts from predation by pet, stray, and feral cats and dogs. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of aquatic habitat and potential secondary poisoning and loss of prey by pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA regarding wildlife species and install signage to keep people and their animals on existing trails.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-80 will mitigate for exotic predators. This measure states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the two-striped garter snake and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

WESTERN SPADEFOOT TOAD (CSC)

Life History

The western spadefoot toad (*Spea hammondii*) is endemic to California and northern Baja California. The species ranges from the north end of California's great Central Valley near Redding, south, east of the Sierras and the deserts, into northwest Baja California (Jennings and Hayes 1994; Stebbins 2003). Although the species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, the western spadefoot toad occurs from sea level to 1,219 meters (4,000 feet) AMSL, but mostly at elevations below 910 meters (3,000 feet) AMSL (Stebbins 2003). The species prefers open expanses with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). Additionally, Holland and Goodman (1998) report that riparian habitats with suitable water resources may also be used. In southern Orange County, western spadefoot toads occur in the San Juan Creek floodplain in association with riparian habitats (County of Orange and USFWS 2006). However, the species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998). Rain pools must lack fish, bullfrogs, and crayfish in order for successful reproduction and metamorphosis to occur (Jennings and Hayes 1994).

The western spadefoot toad is almost completely terrestrial, remaining underground eight to 10 months of the year and entering water only to breed (Jennings and Hayes 1994; Holland and Goodman 1998; Storey *et al*. 1999). The species aestivates in upland habitats near potential breeding sites in burrows approximately one meter in depth (Stebbins 1972) and adults emerge from underground burrows during relatively warm rainfall events to breed. While adults typically emerge from burrows from January through March, they may also emerge in any month between October and April if rain thresholds are met (Stebbins 1972; Morey and Guinn 1992; Jennings and Hayes 1994; Holland and Goodman 1998).

Eggs are deposited in irregular small clusters attached to vegetation or debris (Storer 1925) in shallow temporary pools or sometimes ephemeral stream courses (Stebbins 1985; Jennings and Hayes 1994) and are usually hatched within six days. Complete metamorphosis can occur rapidly, within as little as three weeks (Holland and Goodman 1998), but may last up to 11 weeks (Burgess 1950; Feaver 1971; Jennings and Hayes 1994).

Western spadefoot toads likely do not move far from their breeding pool during the year (Zeiner *et al*. 1988), and it is likely that their entire post-metamorphic home range is situated around a few pools. However, opportunistic field observations indicate that they readily move up to at least several hundred meters from breeding sites (NatureServe 2007).

Western spadefoot tadpoles consume planktonic organisms and algae, but are also carnivorous and will forage on dead vertebrates and invertebrates (Bragg 1964). Adult western spadefoot toads are known to consume butterfly and moth larvae, beetles, termites, ants, crickets, flies, earthworms, and other invertebrates (Dimmitt and Ruibal 1980A; Morey and Guinn 1992; Stebbins 1972; Whitaker *et al*. 1977).

Loss of aquatic and adjacent upland habitats supporting the life cycle of the western spadefoot toad is a primary threat to this species, but other factors related to urban development probably are contributing to this species' decline. During construction, noise could result in the premature emergence of the western spadefoot toad from burrows because, normally, emergence from dormancy depends on low frequency sound caused by rainfall. Dimmitt and Ruibal (1980B) demonstrated that vibration from an electric motor consistently induced 100% emergence from dormancy under very arid conditions. Over the long term, non-native predators, such as bullfrog, crayfish, and mosquito fish, are a threat to western spadefoot toads, especially during breeding and metamorphosis. In addition, artificial lighting likely increases the species' vulnerability to predation by nocturnal predators, such as raccoon, skunk, opossum, fox, and coyotes, during these periods. An increase in pet, stray, and feral cats and dogs would also make the species more vulnerable to predation during these periods. Other factors that may affect the western spadefoot toad include grazing and off-road vehicles, which both may result in crushing or entombment of individuals and degradation of breeding pools; the spread of exotic plant species (*e.g.*, tamarisk, giant reed, iceplant, and pampas grass), which may degrade western spadefoot toad habitat by altered hydrology, eliminating breeding pools, and restricting access to and quality of upland habitats; and human-related degradation of habitat (*e.g.*, trampling of vegetation).

Survey Results

Focused surveys for the western spadefoot toad have been conducted in the Landmark Village and Mission Village portions of the Project area during the breeding season (Compliance Biology 2006C, 2004E). In the Landmark Village portion of the Project area, no indications of the presence of western spadefoot toad were observed, even at any of five road depressions where there was standing or recently standing water. Within the Mission Village development area, a few tadpoles in a drying pool were hydrated enough to make a positive identification. Another drying pool with desiccated tadpoles was identified just outside the western boundary of the Mission Village development area. Both of these pools appear to be the result of human activity, including road construction and other earth movement. The locations of these breeding pools are shown in **Figure 4.5-6**, RMDP/SCP – Special-Status Wildlife Species Occurrences. A western spadefoot toad was also observed in the Project area during amphibian and fish surveys conducted in the Santa Clara River by Aquatic Consulting Services (2002A). The western spadefoot toad was observed within the Santa Clara River upstream of the Commerce Center Bridge, within an isolated pool (**Figure 4.5-6**).

Western spadefoot toads have also been incidentally observed at other locations in the Project area (**Figure 4.5-6**). According to Compliance Biology (Crawford 2007), western spadefoot toads were observed in the Potrero Village development area within a rain pool in winter 2005; this location is believed to be extant. Dudek (2008E) also detected western spadefoot toad eggs in a basin located on an oil field well pad and storage area in the Potrero Village development area during focused surveys for fairly shrimp in close proximity to the Crawford (2007) observation. Western spadefoot toads were also observed in the VCC planning area in a location that has since been developed; eggs and tadpoles were relocated to created pools near Hasley Creek (Crawford 2007; Compliance Biology 2004G). In total, there have been five separate documented occurrences of the western spadefoot toad in the Project area based on the focused surveys and incidental observations described above.

Suitable breeding habitat for the western spadefoot toad on site includes riparian areas and seasonal drainages containing seasonal pools and suitable aestivation habitat includes surrounding uplands within at least several hundred meters of breeding sites. Because western spadefoot toads are associated with specific microhabitats, however, their total suitable habitat on site was not quantified.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Five occurrences of the western spadefoot toad have been identified in the Project area during focused surveys and by incidental observations; none of these occurrences is within the disturbance footprint of the RMDP. However, there is a high potential for this species to occur in other locations with suitable breeding habitat and areas within at least several hundred meters for suitable breeding sites. The implementation of the RMDP would include the construction of bridges and bank stabilization in and adjacent to riparian areas potentially used by western spadefoot toads as breeding or upland aestivation habitat. Additionally, activities associated with implementation of the SCP

(*e.g.*, fence construction) could also result in a small loss of potential upland habitat for the species. Therefore, the implementation of the RMDP and the SCP could result in the loss of occupied western spadefoot toad habitat. However, this impact has not been quantified because of the apparent sporadic distribution of this species on site and because potential habitat within the Project area only includes suitable breeding sites and adjacent uplands.

Given the high potential for suitable breeding and upland habitat in the Project area, the implementation of the RMDP and the SCP could have a substantial direct adverse effect on this species; interfere substantially with the movement of the species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Five occurrences of the western spadefoot toad have been identified in the Project area during focused surveys and by incidental observations. The build-out of the Specific Plan area would result in the loss of the known occurrences from the two breeding pools in the Mission Village development area and the one breeding pool in the Potrero Village development area; the other documented occurrences are either outside the development footprint and/or no longer support western spadefoot toads. There is also high potential for this species to occur elsewhere in the Project area within suitable habitat areas. Therefore, the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of western spadefoot toad breeding and aestivation habitat. Given the high potential for occupied breeding and adjacent upland aestivation habitat in the Project area, the build-out of the Specific Plan, VCC, and Entrada planning areas could have a substantial adverse effect on this species; interfere substantially with the movement of the species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

As described above for direct and indirect impacts, implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of western spadefoot toad breeding and aestivation habitat and likely would also result in the loss of individuals, including adults, juveniles, tadpoles, or egg

masses. Therefore, the combined effect of the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could have a substantial adverse effect on this species; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Combined direct and indirect permanent impacts would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

It is assumed that the western spadefoot toad has a high potential to occur in RMDP construction zones on site. Should western spadefoot toads be present within the disturbance footprint, construction and/or grading activities would result in the direct injury or mortality of western spadefoot toad adults, juveniles, tadpoles, or egg masses as a result of contact with construction equipment, crushing, entombment, or disturbances of breeding pools. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in impacts such as injury, mortality or entombment of western spadefoot toads if fence construction occurred when aestivating western spadefoot toads were present, although the potential for this impact is considered to be low. Given the potential for large aggregations of western spadefoot toads at a breeding location (including surrounding upland habitat) (Jennings and Hayes 1994), the implementation of the RMDP could result in the loss of a large number of western spadefoot toads. Therefore, the implementation of the RMDP and the SCP could have a substantial direct adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential impacts of construction and/or grading activities to known locations of western spadefoot toad observations or areas of suitable habitat are the same as described above for indirect permanent impacts to loss of habitat. The build-out of the Specific Plan, VCC, and Entrada planning areas would likely result in injury or mortality of western spadefoot toad adults, juveniles, tadpoles, or egg masses as a result of contact with construction equipment, crushing, entombment, or disturbances of breeding pools. Therefore, the build-out of the Specific Plan, VCC, and Entrada planning areas could have a substantial adverse effect on this species; interfere substantially with the

movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect western spadefoot toad in areas adjacent to construction zones in the short term and residential and commercial areas in the long term. There have been few observations of this species on site, but short-term and long-term secondary impacts could occur. Short-term secondary effects include construction-related impacts, such as noise and ground vibration, which may cause premature emergence from burrows, thus exposing toads to predation, risk of crushing by equipment and vehicles, and exposure to harsh environmental conditions (*e.g.*, hot, dry weather); hydrologic or water quality alterations that could affect breeding success, including pollutants, sediments, and construction-generated dust that could affect breeding pools in the Santa Clara River or its tributaries and decrease insect prey for the species; and lighting, which could increase predation by nocturnal predators. Implementation of the SCP, such as fence construction, could result in secondary impacts to this species if activities caused premature emergence, thus exposing individuals to predators and potentially harsh environmental conditions.

Long-term development-related impacts resulting from implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could increase impervious surfaces in the surrounding watershed, which in the absence of water detention basins and other facilities would increase surface runoff into the Santa Clara River. The proximity of urban development to suitable western spadefoot toad breeding habitat could result in disruption of nocturnal activities and greater vulnerability to predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators (raccoons, skunks, opossums, and foxes); collecting by children; degradation of habitat from increased human use (*e.g.*, trampling, trash, and off-road vehicles); invasion by exotic plants (*e.g.*, giant reed, tamarisk, and pampas grass); the spread of non-native predatory species (*e.g.*, bullfrogs, African clawed frogs, exotic fish, and crayfish); increased risk of roadkill on roads adjacent to occupied areas; and reduced water quality from pollutants in runoff and use of pesticides, both of which could have toxic effects (*e.g.*, acute lethal affects or chronic effects on development and reproduction) or reduce prey. Additionally, habitat fragmentation and isolation of some local populations of western spadefoot toads would occur, making them more vulnerable to extirpation.

These short-term and long-term secondary impacts could have a substantial adverse effect on this species; interfere substantially with the movement of the species; have the potential to

substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, both short-term secondary impacts associated with construction activities and long-term secondary impacts associated with the RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Overall, implementation of the RMDP and the SCP under Alternatives 3 through 7 would have similar impacts to western spadefoot toad breeding and aestivation habitat to the impacts described above for Alternative 2, including permanent loss of habitat and temporary impacts to habitat. Because of various differences in the Project footprints for Alternatives 3 through 7, especially in relation to drainages and immediately adjacent uplands, there would be some differences in the amount of habitat permanently lost and temporarily impacted. For example, within lower Potrero Canyon, there would be fewer permanent impacts related to Potrero Canyon Road and the bridge crossing of the Santa Clara River under Alternatives 3, 4, and 7 because the bridge would not be constructed and Potrero Canyon Road would be terminated southwest of Potrero Mesa. Alternative 7 would have the least amount of permanent impacts to drainages and adjacent uplands providing potential habitat for the western spadefoot toad because of the pullback of facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the western spadefoot toad compared to the other alternatives.

Although there would be some small differences in the amount of potential breeding and aestivation habitat permanently lost and temporarily impacted under Alternatives 3 through 7, impacts under all of the alternatives could have a substantial adverse effect on this species; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Direct permanent and temporary impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Overall, build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would have similar impacts to western spadefoot

toad breeding and aestivation habitat to the impacts described above for Alternative 2. Because of various differences in the Project footprints for Alternatives 3 through 7, there would be some differences in the amount of habitat permanently lost. Alternatives 4 through 7 would result in fewer impacts to western spadefoot toad habitat than Alternative 3 because VCC would not be constructed under these alternatives. Alternatives 4 through 6 differ from each other through differences in the Entrada planning areas and Homestead East and Mission Village in the Specific Plan area. For example, Alternatives 5 and 6 have progressively smaller development footprints in Mission Village and the Entrada planning area compared to Alternative 4. Alternative 7 would have the smallest development footprint of all the alternatives because, in addition to VCC not being constructed, there would be reductions in the Entrada planning area, Mission Village, and Landmark Village, and Homestead East, adjacent to the Santa Clara River.

Although there would be some small to substantial differences in the amount of potential breeding and aestivation habitat permanently lost under Alternatives 3 through 7, impacts under all of the alternatives could have a substantial adverse effect on this species; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

As described above for direct and indirect impacts under Alternatives 3 through 7, implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the permanent loss of western spadefoot toad breeding and aestivation habitat and likely would also result in the loss of individuals, including adults, juveniles, tadpoles, or egg masses. Although there would be some differences among the alternatives, the combined effect of the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under any of the alternatives could have a substantial adverse effect on this species; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential impacts of construction and/or grading activities to known locations of western spadefoot toad observations or areas of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than those described above for Alternative 2. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would likely result in the loss of western spadefoot toad adults, juveniles, tadpoles, or egg masses. These impacts could have a substantial adverse effect on this species; interfere substantially with the movement of the species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Impacts to western spadefoot toad individuals under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

The potential short-term and long-term secondary effects to the western spadefoot toad and its habitat under Alternatives 3 through 7 would be similar to those described above for Alternative 2.

Short-term secondary effects include construction-related impacts, such as noise and ground vibration (which may cause premature emergence from burrows) and hydrologic or water quality alterations (including pollutants, sediments, and dust) of the Santa Clara River and its tributaries.

Long-term development-related impacts include the creation of impervious surfaces in the surrounding watershed, which could increase surface runoff into the Santa Clara River. Nighttime lighting adjacent to breeding habitat could affect nocturnal activities and increase predation by nocturnal predators. Western spadefoot toads would also be more vulnerable to predation by pet, stray, and feral cats and dogs and other mesopredators; exotic species; collecting; habitat degradation from increased human use and invasion by exotic plants; and increased risk of roadkill. Additionally, habitat fragmentation and isolation of some local populations of western spadefoot toads would occur, making them more vulnerable to extirpation.

These short-term and long-term secondary impacts could have a substantial adverse effect on this species; interfere substantially with the movement of the species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Therefore, both short-term secondary impacts associated with construction activities and long-term secondary impacts associated with the RMDP facilities and build-out of the Specific Plan, VCC,

and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western spadefoot toad: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals, including adults, juveniles, metamorphs, egg masses, and tadpoles, could occur during construction as a result of vegetation clearing and grading and construction activities in breeding pools, including injury and mortality due to direct contact with construction equipment, entombment of hibernating and aestivating individuals, and increased exposure of individuals flushed from burrows or left without protective cover. Five occurrences of the western spadefoot toad have been identified in the Project area during focused surveys and by incidental observations. The build-out of the Specific Plan area would result in the loss of the known occurrences from the two breeding pools in the Mission Village development area and the one breeding pool in the Potrero Village development area; the other documented occurrences are either outside the development footprint and/or no longer support western spadefoot toads. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area and within will be conducted by a qualified biologist in possession of a scientific collecting permit. If western spadefoot toad is identified within a project site, a relocation site will be designed and created, as approved by CDFG, and all detected adults, tadpoles, and egg masses will be collected and relocated. General procedures to avoid and minimize impacts to western spadefoot toad during construction also will be implemented, and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the western spadefoot toad. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment operating in ponds or flowing water; design of bridges, culverts, and other structures so as not to impair the movement of aquatic species; and protection of water quality from mud, silt, and other pollutants.

The permanent loss of suitable habitat for the western spadefoot toad resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas will be mitigated through the preservation, restoration and enhancement, and management of suitable habitat, primarily in the River Corridor SMA, but also in riparian and wetland habitat and adjacent uplands in the High Country SMA and Salt Creek area. With regard to the River Corridor SMA, the Flood Hydraulics Impacts Assessment (PACE

2009) found that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. Following build-out, the River Corridor floodplain would remain 1,000 to 2,000 feet wide and retain the mosaic of habitats that would support the life history of the western spadefoot toad.

With respect to secondary effects, any western spadefoot toads occupying habitat in close proximity to construction zones may be disturbed by construction activities, including ground vibration, dust, and nighttime lighting. Ground vibration could cause toads to emerge from burrows and expose them to predators, adverse environmental conditions (*e.g.*, hot, dry conditions), and increase their chance of injury or mortality from construction equipment and vehicles due to crushing. Lighting may increase their risk of predation from nocturnal predators and dust may adversely affect water quality and their insect prey. Potential breeding pools, including downstream pools, could be disturbed during construction by hydrological alterations and pollutants that impair water quality, thus adversely affecting egg masses and tadpoles. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce the potential effects of ground vibration and dust. All lighting will be downcast away from habitat areas. Any western spadefoot toads detected emerging due to ground vibration will be relocated by a qualified biologist per a CDFG-approved relocation plan. Several general mitigation measures, as described above, will be implemented to protect on-site and downstream wetland and aquatic habitat quality, and in particular, protection of downstream water quality from mud, silt, and other pollutants. Potential long-term effects of development include increased human activity, including habitat degradation and collection; lighting; invasive species, including Argentine ant and invasive plants such as giant reed; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The River Corridor SMA will provide adequate protected open space that will in large part offset these long-term impacts. Several specific mitigation measures will also be implemented to control human activities in the River Corridor SMA, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the open space-urban interface will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures would allow this species to persist on site after development in the River Corridor SMA.

All mitigation measures for the western spadefoot toad are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-52 IMPACTS TO INDIVIDUALS – WESTERN SPADEFOOT TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of western spadefoot toad individuals through pre-development surveys and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce impacts to western spadefoot toad individuals. Most of these mitigation measures address impacts to potential breeding habitats, such as hydrologic alterations and water quality impacts that could adversely affect western spadefoot toads. Although western spadefoot toads usually breed in ephemeral pools in upland grasslands and mixed grassland/coastal sage scrub, they may also breed in riparian habitats with suitable pools (Holland and Goodman 1998). In addition, pre-construction coordination, focused surveys for western spadefoot toad, and biological monitoring will be conducted to reduce impacts.

The following three mitigation measures, BIO-46, BIO-48, and BIO-49, focus primarily on special-status fish, but they generally will also reduce impacts to the western spadefoot toad and other semi-aquatic species.

BIO-46 states that, during any stream diversion or culvert installation activity, a qualified biologist(s) shall be present, and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded spadefoot toads.

BIO-48 states that bridges, culverts, and other structures may not impair movement of fish and aquatic life and specifies relative depth requirements for temporary and permanent culverts.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-53 requires pre-construction surveys for western spadefoot toad within all portions of the Project site containing suitable breeding habitat. If western spadefoot toad is found on site, further measures include habitat creation at a 2:1 ratio, relocation of adults, tadpoles, and egg masses, and monitoring for five years.

BIO-70 is a more generally applicable mitigation measure that specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-53 LOSS OF HABITAT – WESTERN SPADEFOOT TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for western spadefoot toad through habitat protection, restoration and enhancement, and management. SP-4.6-55 and SP-4.6-58, as described above, will also mitigate for loss of habitat by requiring compliance with state and federal permits related to wetlands and water quality.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring

methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development. These transition areas provide potential upland aestivation habitat and also provide a buffer between development and suitable habitat in the River Corridor SMA.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system totaling approximately 6,100 acres that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the western spadefoot toad. These measures refer to habitat protection, restoration and enhancement, and management

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural

undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-53, described above, also requires creation of western spadefoot toad habitat within the Specific Plan area outside the proposed development area if the species is found in areas that would be developed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the western spadefoot toad would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-54 SECONDARY IMPACTS – WESTERN SPADEFOOT TOAD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for short-term secondary impacts to the western spadefoot toad, such as altered hydrology and water quality and inadvertent impacts to suitable habitat adjacent to construction zones, as well as noise and ground vibration. Mitigation measures to offset long-term secondary impacts, such as habitat fragmentation, nighttime lighting, invasive plant species, increased human activity, increased predation by mesopredators, and other sources of habitat degradation (*e.g.*, grazing) were also identified.

In order to mitigate impacts from contact with chemical pollutants, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature during construction, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-55 and SP-4.6-58, as described above.

In order to avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA. These measures, in combination with SP-4.6-53 and SP-4.6-59, which require pre-development surveys as described above, will also help reduce the effects of noise and ground vibration. However, these mitigation measures primarily are designed to minimize impacts to off-site resources and alone will not completely mitigate noise and ground vibration impacts. Because of the sporadic occurrence of the western spadefoot toad and the infeasibility of locating aestivating individuals prior to construction, long-term mitigation measures relating to habitat preservation and management will contribute to the persistence of the species on site and offset these short-term impacts from noise and ground vibration.

The following mitigation measures address the long-term secondary effects listed above. The Newhall Ranch Specific Plan Program EIR identified the several mitigation measures that primarily address habitat fragmentation, increased risk of predation by mesopredators, increased human populations and recreation in close proximity to open space and potential breeding and aestivation habitat for the western spadefoot toad, nighttime lighting, and other activities that could result in degradation of habitat, such as cattle grazing.

SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which relate to the protection, restoration and enhancement, and management of the River Corridor SMA and High Country SMA, will prevent habitat fragmentation and increased predation by mesopredators (by maintaining the presence of top predators, such as coyotes) and will offset the impacts of increased human activity and grazing in the Project area.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19, described above, address the transition area between development and the River Corridor SMA that will both buffer the River Corridor from adverse edge effects and provide potential aestivation habitat for the western spadefoot toad.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

In order to mitigate impacts from grazing, SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures that address potential short-term and long-term secondary effects to the western spadefoot toad, including impacts to hydrology and water quality; increased human activity; pet, stray, and feral cats and dogs; invasive plant and animal species; and use of pesticides.

In order to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, and changes in water temperature, BIO-46, BIO-48, BIO-49, and BIO-70, as summarized above, will be implemented. In addition, BIO-45, BIO-47, BIO-74, and BIO-77 will be implemented.

BIO-44 requires temporary bridges, culverts, or other feasible methods of providing access across the Santa Clara River. A Stream Crossing and Diversion Plan will be prepared that includes a description of diversion measures, such as berms, inflatable dams, sand bags, or other approved materials.

BIO-45 requires construction of bypass channels when the active wetted channel is within the work zone, in accordance with BIO-44. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG and USFWS.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

BIO-77 describes preparation of a plan and mitigation measures be implemented by the applicant specifically to maintain the populations of the undescribed snail and sunflower species, but these measures are also applicable to western spadefoot. The plan will provide guidelines for

collecting data on existing site conditions; developing a construction monitoring program and a post-development monitoring program; developing threshold parameters that activate adaptive management measures for water quality and water quantity issues; excluding unauthorized entry into the spring; and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of Middle Canyon Spring.

In order to mitigate impacts from ground vibration, BIO-52, as summarized above, will be implemented.

In order to mitigate impacts from human activity (short term and long term), collection, and pet, stray, and feral cats and dogs and other mesopredators, BIO-1 through BIO-16, as summarized above, will be implemented. In addition, BIO-19 through BIO-21, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. BIO-20 and BIO-21 provide for the preservation of coastal scrub within the High Country SMA, Salt Creek area, and River Corridor SMA as well as guidelines for development of a coastal scrub restoration plan. These three mitigation measure provide additional potential upland habitat for the western spadefoot toad that will be protected from adverse effects associated with an increased human population in the region.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent the pollution of suitable breeding habitat and potential toxic effects and loss of prey by pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where

determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-80, BIO-85 and BIO-87 will mitigate impacts from non-native invasive plant and animal species that could degrade western spadefoot toad habitat and directly affect individuals, including adults, juveniles, tadpoles, and egg masses.

BIO-72 specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the western spadefoot toad and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

ARROYO CHUB (CSC)

Life History

The arroyo chub (*Gila orcutti*) is designated a California Species of Special Concern (CSC) and is considered imperiled regionally and globally under the Natural Heritage Program methodology and is considered sensitive by the U.S. Forest Service. The arroyo chub is native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers and San Juan and Malibu creeks (CDFG 1995B). Arroyo chub are now rare within their native range and are only common in the upper Santa Margarita River and its tributary De Luz Creek in northern San Diego County; Trabuco Creek below O'Neill Regional Park and San Juan Creek (San Juan Creek drainage) in southern Orange County; and Malibu Creek (Swift *et al.* 1993) and West Fork San Gabriel River below Cogswell Reservoir in Los Angeles County (CDFG 1995B). The arroyo chub's range was artificially expanded as bait with trout or mosquitofish in the 1930s and 1940s (Swift *et al.* 1993). The arroyo chub was successfully introduced into the Santa Ynez, Santa Maria, Cuyama, and Mojave rivers, and is considered to be introduced within the Santa Clara River watershed (Swift *et al.* 1993; CDFG 1995B). If not for the introduced populations, the arroyo chub would likely be considered a threatened or endangered species (NatureServe 2007).

The arroyo chub is a small fish, typically about 70 to 100 millimeters in size. It occurs in slow-moving or backwater sections of warm to cool (10ºC to 24ºC) streams with mud or sand substrates (ENTRIX 2009); it thrives in low-gradient systems (Swift *et al.* 1993). This species may tolerate high temperatures and hypoxic conditions that occur in slow-flowing or stagnant streams and backwater pools in dry summers. The arroyo chub feeds primarily on algae but also feeds on insects and small crustaceans.

The arroyo chub can successfully reproduce after one year (CDFG 1995B). Arroyo chubs are fractional spawners that will breed from May to August, with the majority of breeding events taking place in June and July (CDFG 1995B), although others report spawning in March to April or May (NatureServe 2007). The arroyo chub breeding habitat requires slow-moving areas of water or pools. After hatching, the young spend the next three to four months in areas of quiet water, usually among vegetation or areas with cover (CDFG 1995B).

Survey Results

Arroyo chub have been documented within the Specific Plan area throughout the Santa Clara River. The focused special-status fish species habitat assessment and impact analysis for the Santa Clara River and tributary drainages conducted by ENTRIX (2009) found that the arroyo chub was common to abundant within the Specific Plan area and was the dominant species in the River during surveys. Surveys conducted in the summer of 2000 found this species within 500 meters (1,640 feet) upstream and downstream of the I-5 Bridge over the Santa Clara River (Impact Sciences 2003A, 2003B; Haglund and Baskin 2000). Haglund found the arroyo chub

during surveys for unarmored threespine stickleback in 1988 (Haglund 1989). Arroyo chub were also observed in the Entrada planning area (Aquatic Consulting Services 2002D; Haglund and Baskin 1995, 2000) and the VCC planning area (Haglund 1989). This species is not expected to occur in Salt Creek and other tributaries to the Santa Clara River due to lack of adequate hydrology.

During the ENTRIX (2009) surveys, the arroyo chub appears to have had a productive year (including numbers of young-of-the year) in spite of high levels of previous flood-related disturbances. This species is known to be widespread and common within perennial reaches of the Santa Clara River in Ventura and Los Angeles Counties.

Within the Project reach, arroyo chub only occurs within perennial aquatic habitat in the Santa Clara River, which comprises a small portion of the wetland/riparian habitat in the River and has high temporal variability, suitable aquatic habitat was not quantified for the purpose of the impact analysis in this EIS/EIR.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP could result in permanent physical changes to the Santa Clara River corridor and surrounding watershed that could affect suitable arroyo chub habitat, including hydrology and fluvial processes. Implementation of the SCP would not directly affect this species.

Habitat variables evaluated by ENTRIX (2009) included potential changes in floodplain width, backwater refuge habitat area (flood condition aquatic refugia), and water velocity during various theoretical flood frequency events. ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on special-status fish species, using the unarmored threespine stickleback as an indicator species because of its susceptibility to higher velocity

conditions. Parameters evaluated included potential changes in floodplain width, backwater refuge habitat (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including 20- and 100-year occurrences (**Figures 4.5-61a** and **4.5-61b**). The following summarizes the results of this analysis.

Implementation of the RMDP within the Project reach of the Santa Clara River would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch Water Reclamation Plant (WRP) outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). The placement of bridge piers would be located within the Santa Clara River floodplain. This floodplain ranges in width from 980 to 1,550 feet at the bridge crossings and bridge footings would have the potential to occur in flowing portions of the River depending on stream hydrology. For example, the Potrero Canyon Bridge includes approximately 15 piers within the floodplain. During any given storm event, the number of piers subject to inundation may range from a single pier, to all of the piers. However, during summer low flows, the maximum number of piers to likely be in contact with the wetted channel would be two piers per bridge crossing. This would result in the direct loss of habitat occupied by arroyo chub. While the placement of bridge footings would result in the loss of River channel, the large width and hydrology of the River would maintain the formation of natural channels to support this species.

The primary effect of construction within the River channel is the alteration of natural stream hydrology and the quantity of stickleback habitat available. The ENTRIX report (2009) analyzed the hydrologic effects of the Project on the Santa Clara River for impacts to potential special-status fish species habitat. Based on an evaluation of velocity tolerance studies of stickleback fishes, ENTRIX inferred that unarmored threespine stickleback in the Santa Clara River require flood refugia velocities of two fps or less in natural river floodplain in order to avoid being washed downstream during flood events (ENTRIX 2009). Arroyo chub may be more tolerant of higher flow velocity conditions, however, this analysis uses the more conservative assumptions applied to unarmored threespine stickleback. Therefore, consistent with this approach, any areas maintaining velocities less than or equal to two fps would provide refuge for these species during storm events. Under existing conditions (dry and wet season conditions), most of the wetted channel of the Santa Clara River supports flows greater than two fps.

At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available area with less than two fps velocity of 1.3 acres and 5.5 acres, respectively, for special-status fish species. During the 20-, 50-, and 100-year

events, there is a decrease in area with less than two fps velocity at 12.5 acres, 11.1 acres, and 8.9 acres, respectively. This decrease is not expected to be significant, as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia habitat for the arroyo chub and other special-status fish species. Suitable floodplain refugia requires microhabitat elements, such as vegetative cover, substrate, and stream topography (ENTRIX 2009). Agricultural land is not considered as refuge as it presents a greater threat to fish stranding during high flood events. The ENTRIX report further indicates that the alteration of the stream hydrology would not significantly impact arroyo chub and other special-status fish access to flood plain refugia during flood events, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow floodplain refugia would not be substantially altered. This is illustrated on **Figures 4.5-61a** and **4.5-61b,** which indicate stream flow areas with less than two fps during the 20 and 100-year flood events, respectively (see entire set of graphics in ENTRIX 2009 report, **Appendix 4.5**).

Implementation of the RMDP in the Project reach of the Santa Clara River would include buried bank stabilization along the upland–riparian interface along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch), the construction of bridges at Potrero Canyon, Long Canyon, and Commerce Center Drive, and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). ENTRIX (2009) evaluated the long-term effects of these facilities on special-status fish species habitat and concluded that no significant effects to fish habitat would occur because the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

There also would be no direct impacts to arroyo chub habitat resulting from modifications to tributaries to the Santa Clara River, due to the absence of fish in general, including special-status fish species. Most of the tributaries do not support perennial flows, and none of the tributaries have surface water connectivity with the Santa Clara River, except for Middle and Potrero canyons, which although they contain perennial flow, they have substantial blockages (bedrock headcuts or cascades) that are impassable to fish (ENTRIX 2009).

Although no substantial permanent impacts to arroyo chub habitat would occur through implementation of the RMDP, the Project would temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Bridge construction, in particular, could directly affect aquatic habitat occupied by arroyo chub and other special-status fish through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor. Direct impacts from temporary construction would be significant absent mitigation

primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

With implementation of the RMDP, direct permanent and temporary impacts could substantially affect chub habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct temporary impacts (Loss of Habitat) would be significant, absent mitigation. Implementation of the RMDP would not result in the significant alteration to stream hydrology or limit access to refugia during storm events and, therefore, direct permanent impacts would be adverse but not significant.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River, construction activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas do not have potential to harm or eliminate occupied arroyo chub habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on chub habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would not be significant because no impacts are expected to occur as a result of Specific Plan build-out and development outside of the River and aquatic habitat.

Combined Direct and Indirect Permanent Impacts

Only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts are considered to be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The presence of arroyo chub and other special-status fish species is quite variable (ranging from rare or absent in certain reaches of the River, to locally abundant in any given year) in the Project reach, and the species is assumed to be present for this analysis. Implementation of the RMDP, including construction of buried bank structures and bridges, could adversely affect arroyo chub individuals during construction work within the River. The potential for impacts from installation of these structures is increased, as the construction is planned for marginal areas of the riparian zone and because this species is known to use lateral backwater refuge habitat and aquatic environments of emergent, fringe vegetation. Direct impacts to the species may occur during construction of RMDP components during the following anticipated activities: stream diversion and/or species exclusion; unauthorized entry of construction equipment into ponded or flowing water; placement of fill in occupied waters; construction dewatering activities; discharge of pollutants, including silt, sediment, fresh concrete, trash/debris, and petroleum or other deleterious materials or pollutants, and/or; unauthorized personnel entry into occupied waters.

These activities could result in the following impacts: inadvertently directing fish to unsuitable habitats, blocking fish passage, stranding of fish in unsuitable habitat, or directing fish into unsuitable flow regimes; causing water quality conditions unsuitable for the fish survival; direct mechanical crushing or entombment of fish; unauthorized collection of individuals; and/or physical disturbance of river edge habitats.

Implementation of the SCP would not directly impact this species within the Project reach or downstream. Implementation of the RMDP could have direct substantial adverse effects on the arroyo chub, interfere with the movement of the species, and substantially reduce the number of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River corridor, build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the impacts to arroyo chub individuals. Project build-out would not have a substantial adverse effect on the arroyo chub; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or

substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because physical onsite impacts are not expected to occur due to Specific Plan build-out.

Secondary Impacts

Implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in both short-term secondary effects during construction and long-term effects due to use of RMDP facilities and build-out of the Project area. These impacts could affect the chub along the Santa Clara River corridor within the Project area and in downstream populations. Implementation of the SCP would not result in secondary impacts to this species.

Short-term construction-related effects include hydrologic and water quality effects. These short-term impacts could affect arroyo chub and other special-status fish species in the Santa Clara River within the Project area and in downstream populations (same as previously described for direct impacts to individuals).

Long-term effects associated with operation of RMDP facilities and build-out of the Project area due to potential physical changes in the River and increased discharges could include alterations in base flows, timing and duration of flood flows, biochemical changes, condition and composition of the substrate, aquatic and riparian vegetation (including exotic species), and water temperatures as well as increased pollutants from irrigation runoff and increased runoff from roadways. Additional secondary impacts associated with increased human presence include incidental litter and trash from recreation activity; impacts such as fecal material from pet, stray, and feral cats and dogs entering the aquatic system; and increased predation by exotic predators, such as bullfrogs and non-native fish.

These short-term and long-term secondary impacts could have a substantial adverse effect on the arroyo chub; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species (significance criteria 1, 4, and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Overall, implementation of the RMDP under Alternatives 3 through 7 would have similar types of impacts to arroyo chub habitat in the Santa Clara River corridor to those described above for Alternative 2 (**Figures 4.5-34-A1** through **4.5-38-D2**). Although no substantial permanent impacts to arroyo chub habitat would occur through implementation of the RMDP under Alternatives 3 through 7, the Project has the

potential to temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Buried bank stabilization would be installed at the riparian–upland interface under all the alternatives, although under Alternative 7 it would be outside the 100-year floodplain and thus would have a substantially reduced risk of temporary impacts to arroyo chub habitat. Bridge construction, in particular, would directly affect aquatic habitat occupied by arroyo chub through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor as previously described for Alternative 2. Three bridges would be constructed under Alternative 2. Bridges would also be constructed under Alternatives 3 through 7: two under Alternatives 3, 4, and 6; three under Alternative 5; and one under Alternative 7 (see **Table 4.5-23**, Key Components of Alternatives, for details). Thus, Alternatives 3, 4, 6, and 7 would have relatively reduced temporary impacts from bridge construction compared to Alternatives 2 and 5.

As described previously for Alternative 2, direct impacts from construction would be significant absent mitigation primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on special status fish species (using stickleback as an indicator species due to its vulnerability to high flow velocities) for Alternatives 3, 4, 5, 6, and 7. Parameters evaluated included potential changes in floodplain width, floodplain refugia (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including five-, 10-, 20-, 50-, and 100-year occurrences. **Figures 4.5-62a** through **4.5-65b** show the range of floodplain effects for the 20- and 100-year flood events. The following summarizes the results of this analysis.

Alternatives 3 and 4

Implementation of the RMDP within the Project reach of the Santa Clara River would include 31,857 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of river (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch; the construction of bridges at Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-34-A1** through **4.5-35-D2**). The ENTRIX report (2009) indicates that there would be the following impacts to potential arroyo chub floodplain refugia. At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available refugia of 2.1 and 8.9 acres, respectively, for chub with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in refugia with less than two fps flow at 7.3 acres, 5.3 acres and 5.7 acres, respectively.

The decrease in refugia is not expected to be significant as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia for the arroyo chub and other special-status fish species (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 3 and 4 construct one less bridge (Potrero Canyon Road) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 5

Implementation of the RMDP between Salt Creek and Middle Canyon would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-36-A1** through **4.5-36-D2**). The ENTRIX report (2009) indicates that there would be the following impacts to potential chub habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 and 5.5 acres, respectively, for the arroyo chub with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in habitat with less than two fps flow at 12.5 acres, 11.1 acres and 8.9 acres, respectively. The decrease in habitat is not expected to be significant as the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for arroyo chub and other special-status fish (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 5 bridge construction (three bridges) would be similar to Alternative 2 and the direct impacts from construction would be the same with regard to arroyo chub, and therefore would be significant absent mitigation.

Alternative 6

Implementation of the RMDP between Salt Creek and Middle Canyon would include 29,293 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon and Long Canyon; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-37-A1** through **4.5-37-D2**). The ENTRIX report (2009)

indicates that there would be the following impacts to potential chub habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 and 10.7 acres, respectively, for the arroyo chub with less than two fps flow. During the 20-, 50-, and 100-year events there is a decrease in habitat with less than two fps flow at 7, 4.6, and 2.6 acres, respectively. The decrease in habitat is not expected to be significant as the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for the arroyo chub and other special-status fish (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternative 6 constructs one less bridge (Commerce Center Drive) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 7

Implementation of the RMDP between Salt Creek and Middle Canyon would include the construction of one bridge at Long Canyon (with spans removed from the 100-year floodplain); the grading and conversion of 13,956 linear feet of ephemeral drainages to buried storm drains; and construction of a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-38-A1** through **4.5-38-D2**). Bank protection would be removed from the 100-year floodplain and built in upland areas. All jurisdictional streams and wetlands in the Santa Clara River, Potrero Canyon, Chiquito Canyon, and San Martinez Grande Canyon drainages would be preserved or avoided except where bridges are built to facilitate road crossings. The ENTRIX report (2009) indicates that there would be the following impacts to potential arroyo chub and other special-status fish habitat. The model predicts a projected increase of available refuge habitat (less flow during the five-, 10-, 20-, 50-, and 100-year flood events. The amount of available habitat would be 2.0, 13.3, 22.5, 41.7, and 25.2 acres, respectively. The ENTRIX report (2009) further indicates that there would be no impacts from the installation of these Project components, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

Alternatives 7 constructs two less bridges (Potrero Canyon Road and Commerce Center Drive) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

While implementation of the RMDP under Alternatives 3 through 7 would not have a substantial permanent adverse effect, temporary impacts could substantially affect arroyo chub; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-

sustaining levels; threaten to eliminate the species; or substantially reduce the number or restrict the range of the species. Direct permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts would occur but direct temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

The arroyo chub within the Project area is limited to aquatic habitats within the Santa Clara River. As with Alternative 2, construction activities associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas do not have the potential to harm or eliminate occupied chub habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on the arroyo chub; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts are expected to occur.

Combined Direct and Indirect Permanent Impacts

Alternatives 3 through 7, only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts are considered to be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Similar to Alternative 2, implementation of the RMDP would require the construction of bridges and bank stabilization within the River corridor, although the number of bridges varies among the alternatives and bank stabilization under Alternative 7 would be constructed outside the 100-year floodplain, resulting in reduced risk of temporary impacts to arroyo chub habitat under this alternative. Implementation of the RMDP under Alternatives 3 through 7 may result in impacts to chub individuals if construction occurs during River flows adequate to support these species in

work zones in occupied habitat or if construction causes interruptions in water flows. Implementation of the SCP would not directly impact this species.

Implementation of the RMDP under Alternatives 3 through 7 could have a direct substantial adverse effect on the arroyo chub; interfere with the movement of the species; or substantially reduce the number of the species. Impacts to individuals under Alternatives 3 through 7 would be significant, absent mitigation.

Implementation of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7, would not result in indirect impacts to individuals.

Secondary Impacts

The potential short-term and long-term secondary impacts to the arroyo chub and its habitat under Alternatives 3 through 7 would be similar to those described above for Alternative 2.

Short-term construction-related effects include hydrologic and water quality effects, as described above, that could affect arroyo chub in the Santa Clara River within the Project area and in downstream populations.

Long-term effects associated with operation of RMDP facilities and build-out of the Project area could occur due to potential physical changes in the River and increased discharges and could affect base flows and flood flows and induce biochemical, substrate, temperature, and vegetative changes. Increased human activity could increase litter and trash, and fecal material from pet, stray, and feral cats and dogs may enter the aquatic system. In addition, increased predation by exotic predators, such as bullfrogs and non-native fish, may occur.

These short-term and long-term secondary impacts could have a substantial adverse effect on the arroyo chub; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species. Secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to arroyo chub: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will prevent impacts to arroyo chub individuals. To prevent impacts to arroyo chub, protective measures will be implemented, such as pre-construction surveys, biological monitoring, exclusion of the species from construction

areas using temporary diversion channels, and protection of habitat through facilities design guidelines and BMPs, which will prevent impacts to arroyo chub individuals.

Impacts to individuals, including adults and fry (juvenile fish), could occur during construction as a result of heavy equipment operation for access and grading, or during diversion of Santa Clara River flows. The Project incorporates numerous elements to avoid and minimize potential impacts to individuals, such as injury or mortality, which would come as a result of direct contact with construction equipment or as an outcome of modification of River habitat, such as flow diversion activities. These measures include pre-construction surveys for any construction activity within 300 feet of River habitat to assure that arroyo chub individuals are avoided or excluded, particularly during the sensitive periods such as spawning or when fry are present. These measures also specify the methods to be used for excluded arroyo chub, as well as how temporary diversion channels will be constructed to assure that adequate rearing habitat is present for chub during construction. These measures also employ provisions for constructing permanent and temporary stream crossings in the Santa Clara River in a manner that will allow for unimpeded movement upstream and downstream. Numerous water quality measures, such as construction stormwater BMPs (*e.g.*, silt fencing, erosion control materials, sediment basins) and the installation of water quality treatment facilities are also included to minimize impacts from pollutants related to storm runoff during storm events.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR will reduce temporary impacts to arroyo chub habitat through facilities design requirements, which will avoid and minimize impacts to habitat, and conformance with state and federal permits to protect water quality.

The vast majority of chub habitat in Project reach of the Santa Clara River will be preserved under all of the alternatives. Arroyo chub habitat will be impacted through the construction of RMDP facilities, by bridge pier or column footings in particular. It is estimated that one to two pier or column footings would affect arroyo chub habitat at each of the three Santa Clara River bridge crossings (Commerce Center Drive, Long Canyon Road, Potrero Canyon Road) depending on the location of the active channel. The wetted channel of the River is typically between 30 and 50 feet wide, while the River floodplain ranges between 1,000 and 2,000 feet wide. The spacing between piers and columns will be 100 feet, thus approximately one to two pier or column footings per bridge could be placed in the flow of the River and affect arroyo chub habitat. Because River flow will deflect off of these structures and will become realigned, arroyo chub habitat will become re-established after bridge construction is completed. Temporary diversion for the construction of piers and columns will include the establishment of additional habitat downstream to allow for necessary arroyo chub spawning, rearing, and/or oversummering. Bank stabilization features (buried soil cement, rock riprap, or gunite lining) will impact chub habitat through floodplain alterations caused by changes to flood flows through the Project area. Under severe flood conditions, arroyo chub will seek slow-moving floodplain

areas as refugia from high velocity conditions. Although bank stabilization features will sometimes constrict flows through the Project reach, the amount of available flood refugia present during these events is adequate to protect arroyo chub from being flushed out of the Project area.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will minimize secondary impacts from affecting the arroyo chub and its habitat. Impacts such as increased chemical pollutants, sedimentation, and increased human activity will be mitigated by measures such as the protection and management of the River Corridor SMA, creation of buffer areas between the River Corridor SMA and development, water quality requirements, and restrictions on public access. In addition, the technical studies conducted by ENTRIX (2009) concluded that suitable chub habitat would not be significantly affected by the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas under any of the alternatives. Further, the Flood Technical Report (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The PACE study determined that the River would still retain sufficient width to allow natural fluvial processes to continue; as a result, the mosaic of habitats in the River that support various special-status fish species would be maintained and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected.

All mitigation measures listed below are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-55 IMPACTS TO INDIVIDUALS – ARROYO CHUB

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the impacts to special-status fish species (primarily unarmored threespine stickleback) through facilities design requirements, pre-development surveys, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-44 requires that drainages with flows greater than 2,000 cfs have soft bottoms. Bank protection will be of ungrouted rock or buried bank stabilization, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.

SP-4.6-53 requires updated surveys for special-status plants, animals, and vegetation communities as determined necessary by the County whenever construction maps are submitted. Based on the results of the surveys, additional conditions and mitigation measures may be required.

SP-4.6-54 requires that prior to development within or disturbance to occupied threespine stickleback habitat, a formal consultation with the USFWS shall occur.

SP-4.6-55 obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats.

SP-4.6-57 requires that, where bridge construction is proposed and water flow will be temporarily diverted, blocking nets and seines be used to control and remove fish from the area of activity. All fish captured during this operation will be stored in tubs and returned unharmed to the river after construction activities are complete.

SP-4.6-58 requires that in order to limit impacts to water quality, the Specific Plan shall conform to all provisions of required NPDES permits and water quality permits required by the RWQCB.

SP-4.6-59 requires consultations with the County of Los Angeles and CDFG before surveys, after surveys, at subdivision map approval, and prior to development or disturbance to habitats occupied by special-status species. Based on the results the consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will mitigate the impacts to arroyo chub (and other special-status fish species) individuals. These mitigation measures include pre-development focused surveys for special-status fish, coordination with CDFG, channel diversion requirements, biological monitoring, avoidance of flowing water, design guidelines for bridges and culverts, and other BMPs. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation. Specifically, Mitigation Measure WQ-1 in **Section 4.4,** Water Quality, and Mitigation Measures GRR-1 through GRR-7 in **Section 4.2**, Geomorphology and Riparian Resources, provide additional measures to reduce the impacts to arroyo chub and other special-status fish individuals. These mitigation measures include implementation of Project BMPs (including runoff control, conservation of natural areas, minimization of stormwater runoff pollutants of concern, prevention of slope and channel erosion, and education and signage to discourage illegal dumping to the storm drains), and other measures to minimize impacts to riparian resources and geomorphology (peak storm flow control, bridge span and clearance guidelines, maintenance minimization, channel design to minimize erosion potential, sediment

and debris control, reintroduction of sediments for beach replenishment, and a Geomorphology Monitoring and Management Plan).

BIO-43 provides for the biological surveying of aquatic habitats within 300 feet of construction sites and access roads for the presence of special-status fishes, at least 10 days prior to commencing construction, unless fish spawn has occurred or juvenile fishes are present; in which case, construction activities would be suspended.

BIO-44 requires that temporary crossings or access across the River be constructed outside of the winter season and not during spring periods when fish spawning is occurring, and be consistent with a Stream Crossing and Diversion Plan that outlines the following: the timing and methods for pre-construction fish surveys, a detailed description of the diversion methods, fish exclusion techniques, methods to maintain fish passage, channel habitat enhancement design, fish stranding surveys, and the techniques for the removal of temporary crossings prior to winter storm flows.

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-46 requires that a qualified biologist will inspect diversion or dewatering activities for stranded fish or other aquatic organisms.

BIO-47 provides for the construction of additional slow moving water habitats upstream and downstream of any river crossing or bridge construction area, to provide refuge for special-status fishes during construction.

BIO-48 requires the design and installation of bridges, culverts, or other structures to not impair the movement of fish and aquatic life, and requires provisions for a low flow channel where velocities are less than 2 feet per second to allow fish passage.

BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows.

BIO-70 provides for construction plans that will include erosion control plans and dust control plans, specifications, and details, along with an overall Project stormwater pollution prevention plan (SWPPP). Together, these documents shall include measures to ensure that impacts (*e.g.*, the introduction of chemical pollutants, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology) to vegetation communities and special-status plant species are avoided or minimized during construction.

BIO-71 requires that development areas have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and aquatic wildlife species. Dust

control plans shall be prepared prior to initiation of construction activities and shall comply with SCAQMD Rule 403 (SCAQMD 2005).

Finding of Significance for Loss of or Harm to Individuals After Mitigation

After mitigation, impacts to arroyo chub individuals would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-56 LOSS OF HABITAT – ARROYO CHUB

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the temporary impacts to habitat for special-status fish through RMDP facilities design requirements, consultation with the USFWS, and conformance with federal and state permits to protect water quality.

SP-4.6-44, SP-4.6-54, SP-4.6-55, and SP-4.6-58, as described above, will be implemented to mitigate impacts related to unarmored threespine stickleback through facilities design requirements, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the temporary loss of habitat for the arroyo chub. These measures refer to stream diversions, BMPs, and facilities design. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

Finding of Significance for Loss of Habitat After Mitigation

Permanent impacts (Loss of Habitat) would not be significant because impacts will be predominantly outside of the stream channel and be limited with respect to aquatic habitat. After

mitigation, temporary impacts to arroyo chub habitat would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-57 SECONDARY IMPACTS – ARROYO CHUB

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for both short-term secondary impacts to the arroyo chub, such as altered hydrology and water quality, and long-term secondary impacts, such as potential physical changes in the River; altered base and flood flows; biochemical, substrate, and temperature alterations; vegetative changes, such as invasive plant species; and increased human activity and impacts from pet, stray, and feral cats and dogs.

Most importantly, the River Corridor SMA will be protected and managed to preserve aquatic and riparian resources, including the arroyo chub and its habitat, through a series of mitigation measures. SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats, including aquatic habitats used by the arroyo chub.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. These measures will provide a buffer between human activity and aquatic habitats supporting the arroyo chub. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-20 requires that all grading perimeters within the River Corridor SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to

avoid inadvertent impacts to riparian resources (including aquatic habitats) outside the grading area in the River Corridor SMA.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA.

SP-4.6-27 prohibits grazing in the River Corridor SMA except as a long-term resource management activity. Controls on grazing will help protect water quality in aquatic habitats used by the arroyo chub.

SP-4.6-44, SP-4.6-54, SP-4.6-55, and SP-4.6-58, as described above, will be implemented to mitigate impacts related to unarmored threespine stickleback through facilities design requirements, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to arroyo chub, including short-term impacts to hydrology and water quality and long-term impacts, such as effects on movement; increased human activities; pet, stray, and feral cat and dogs; habitat degradation from exotic plants; and increased predation from exotic predators. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios. Although these measures primarily refer to riparian habitats, the riparian/aquatic communities in the River Corridor SMA will be addressed comprehensively in a manner that protects and enhances habitat for the arroyo chub, including management of invasive species, such as giant reed.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

BIO-63 will be implemented to mitigate impacts by pet, stray, and feral cats and dogs, such as fecal material entering the aquatic system. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-80 states that the Project applicant shall retain a qualified biologist to develop and implement an Eradication Plan for bullfrog, African clawed frog, and crayfish. Following construction, monitoring shall be conducted at sentinel locations along the River Corridor SMA (and other potential habitat areas) annually for five years. After five years, monitoring shall be conducted bi-annually for 50 years.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to the arroyo chub and its habitat would not be significant for Alternatives 2, 3, 4, 5, 6, and 7.

SANTA ANA SUCKER (CSC)

Life History

The Santa Ana sucker (*Catostomus santaanae*) is listed as a California Species of Special Concern (CSC) throughout its range. Outside the Newhall Ranch Specific Plan area, populations within the species' natural historic range, including the Los Angeles, San Gabriel, and Santa Ana river basins, are listed federally as Threatened. Populations within the Santa Clara River watershed are not listed as federally threatened. It is also considered sensitive by the U.S. Forest Service and is considered critically imperiled by the Natural Heritage Program and vulnerable by the IUCN World Conservation Union.

Santa Ana suckers are native to southwestern California and endemic to lower-elevation streams within the Los Angeles, San Gabriel, and Santa Ana river drainages (McGinnis 2006; Saiki 2000; Stephenson and Calcarone 1999). Natural history records for the Santa Ana sucker in California include three native, three historical, and four introduced populations. The remaining native populations are within the east, north, and west forks of the San Gabriel River inside the Angeles National Forest, the lower and middle Santa Ana River, and the lower Big Tujunga Creek in the Los Angeles River drainage. Historically, the Santa Ana sucker occurred in the upper Santa Ana River, Canyon and City creeks in the foothills of the San Bernardino Mountains, and Santiago Creek in the foothills of the Santa Ana Mountains. Finally, introduced populations are present in the Santa Clara River, Piru Creek, Sespe Creek, and San Francisquito Creek (Swift *et al.* 1993; Stephenson and Calcarone 1999; NEA 2004; NatureServe 2007). This species is known to hybridize with another introduced species (*C. fumeiventris*) in lower reaches of the Santa Clara River (Buth and Crabtree 1982). The Santa Clara River population is one of the largest (Moyle *et al.* 1995). Santa Ana suckers seem to have generalized stream habitat requirements, but they do not tolerate highly polluted or modified streams (Moyle *et al.* 1995; Baskin and Haglund 1999).

The Santa Ana sucker is reproductively mature the summer of its first year. The fish is short lived and usually survives two breeding seasons (Baskin and Haglund 1999). The Santa Ana sucker has a protracted spawning period that begins in March and can last through July (NatureServe 2007; Baskin and Haglund 1999). The Santa Ana sucker is known for its high fecundity. A female can produce between 4,000 and 16,000 eggs (NEA 2004; NatureServe 2007), which are spawned over gravel substrates. Due to its high fecundity, this species can quickly repopulate a stream after severe flooding and it appears to be reproductively adapted for rapid population recovery (NEA 2004; NatureServe 2007).

Survey Results

Santa Ana sucker has been documented within the Specific Plan area throughout the Santa Clara River. Most recently, ENTRIX (2009) found that the Santa Ana sucker was common within the

Specific Plan area of the RMDP. Surveys from Salt Creek Canyon upstream to The Old Road Bridge along the Santa Clara River, for example, collected approximately 100 Santa Ana suckers (ENTRIX 2009). Surveys conducted in 2000 found this species within 500 meters (1,640 feet) upstream and downstream of the I-5 Bridge over the Santa Clara River (Impact Sciences 2003A, 2003B; Haglund and Baskin 2000). This species is not expected to occur in tributaries to the Santa Clara River due to lack of hydrology and/or impassable barriers.

Other survey results include:

- In 1976, Bell recorded the occurrence of this species from I-5 downstream throughout the area of surface flow, but none from San Francisquito Creek downstream of Scott Road (SMEA 1995);
- In 1987 and 1989 respectively, Soltz and Haglund did not locate Santa Ana suckers from McBean Parkway downstream to I-5, from San Francisquito Creek downstream of Scott Road, or specimens between I-5 and Castaic Creek (SMEA 1995A);
- SMEA (1995A) did not find Santa Ana suckers located between The Old Road Bridge and the mouth of Castaic Creek, but did locate them between The Old Road Bridge and Bouquet Canyon Road Bridge and in San Francisquito Creek;
- No Santa Ana suckers were found along the Santa Clara River within the Castaic Junction Project Area by Aquatic Consulting Services, Inc. (2002A);
- No Santa Ana suckers were found along the Santa Clara River west of Commerce Center Bridge to the Ventura County Line, California by Aquatic Consulting Services, Inc. (2002B);
- No Santa Ana suckers were found along the Santa Clara River from the Ventura County Line to Las Brisas Bridge, Ventura County, California by Aquatic Consulting Services, Inc. (2002C);
- One location of Santa Ana suckers was found along the Santa Clara River from the Commerce Center Bridge Project Area by Aquatic Consulting Services, Inc. (2002D);
- Santa Ana suckers were identified at only one location, sample station 24, during Impact Sciences' (2002) fish survey;
- No Santa Ana suckers were found in Castaic Mesa, Castaic Creek by Impact Sciences (2003A);
- Two Santa Ana suckers were found in the Natural River Management Plan Area by Impact Sciences (2003B); and
- Santa Ana suckers were found within both reaches of Newhall Ranch by Impact Sciences (2003C).

This species is known to be generally common within perennial reaches of the Santa Clara River in Ventura and Los Angeles Counties. Within the Project area, Santa Ana suckers use only perennial aquatic habitat in the Santa Clara River, which comprises a small portion of the wetland/riparian habitat in the River and has high temporal variability; therefore, suitable aquatic habitat was not quantified for the purpose of the impact analysis in this EIS/EIR.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the proposed RMDP could result in permanent physical changes to the Santa Clara River corridor and surrounding watershed that could affect suitable Santa Ana sucker habitat, including hydrology and fluvial processes. Implementation of the SCP would not directly affect this species.

Habitat variables evaluated by ENTRIX (2009) included potential changes in floodplain width, backwater refuge habitat area (flood condition aquatic refugia), and water velocity during various theoretical flood frequency events. ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on special-status fish species, using the unarmored threespine stickleback as an indicator species because of its susceptibility to higher velocity conditions. Parameters evaluated included potential changes in floodplain width, backwater refuge habitat (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including 20- and 100-year occurrences (**Figures 4.5-61a** and **4.5-61b**). The following summarizes the results of this analysis.

Implementation of the RMDP within the Project reach of the Santa Clara River would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the

construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch Water Reclamation Plant (WRP) outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). The placement of bridge piers would be located within the Santa Clara River floodplain. This floodplain ranges in width from 980 to 1,550 feet at the bridge crossings and bridge footings would have the potential to occur in flowing portions of the River depending on stream hydrology. For example, the Potrero Canyon Bridge includes approximately 15 piers within the floodplain. During any given storm event, the number of piers subject to inundation may range from a single pier, to all of the piers. However during summer low flows, the maximum number of piers to likely be in contact with the wetted channel would be two piers per bridge crossing. This would result in the direct loss of habitat occupied by Santa Ana sucker. While the placement of bridge footings would result in the loss of River channel, the large width and hydrology of the River would maintain the formation of natural channels to support this species.

The primary effect of construction within the River channel is the alteration of natural stream hydrology and the quantity of stickleback habitat available. The ENTRIX report (2009) analyzed the hydrological effects of the Project on the Santa Clara River for impacts to potential special-status fish species habitat. Based on an evaluation of velocity tolerance studies of stickleback fishes, ENTRIX inferred that unarmored threespine stickleback in the Santa Clara River require flood refugia velocities of two fps or less in natural river floodplain in order to avoid being washed downstream during flood events (ENTRIX, 2009). Santa Ana sucker may be more tolerant of higher flow velocity conditions, however, this analysis uses the more conservative assumptions applied to unarmored threespine stickleback. Therefore, consistent with this approach, any areas maintaining velocities less than or equal to two fps would provide refuge for these species during storm events. Under existing conditions (dry and wet season conditions), most of the wetted channel of the Santa Clara River supports flows greater than two fps

At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available area with less than two fps velocity of 1.3 acres and 5.5 acres, respectively, for special-status fish species. During the 20-, 50-, and 100-year events, there is a decrease in area with less than two fps velocity at 12.5 acres, 11.1 acres, and 8.9 acres, respectively. This decrease is not expected to be significant, as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia habitat for the Santa Ana sucker and other special-status fish species. Suitable floodplain refugia requires microhabitat elements, such as vegetative cover, substrate and stream topography (ENTRIX 2009). Agricultural land is not considered as refuge as it presents a greater threat to fish stranding during high flood events. The ENTRIX report further indicates that the alteration of the stream hydrology would not significantly impact Santa Ana sucker and other special-status fish access to flood plain refugia during flood events, since the general morphology of the Santa Clara River, adjacent rearing

habitat, and high-flow floodplain refugia would not be substantially altered. This is illustrated on **Figures 4.5-61a** and **4.5-61b,** which indicate stream flow areas with less than two fps during the 20 and 100-year flood events, respectively (see entire set of graphics in ENTRIX 2009 report, Appendix 4.5).

Implementation of the RMDP in the Project reach of the Santa Clara River would include buried bank stabilization along the upland-riparian interface along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch), the construction of bridges at Potrero Canyon, Long Canyon, and Commerce Center Drive, and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-33-A1** through **4.5-33-D2**). ENTRIX (2009) evaluated the long-term effects of these facilities on special-status fish species habitat and concluded that no significant effects to fish habitat would occur because the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

There also would be no direct impacts to Santa Ana sucker habitat resulting from modifications to tributaries to the Santa Clara River, due to the absence of fish in general, including special-status fish species. Most of the tributaries do not support perennial flows, and none of the tributaries have surface water connectivity with the Santa Clara River, except for Middle and Potrero canyons, which although they contain perennial flow, they have substantial blockages (bedrock headcuts or cascades) that are impassable to fish (ENTRIX 2009).

Although no substantial permanent impacts to Santa Ana sucker habitat would occur through implementation of the RMDP, the Project would temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Bridge construction, in particular, could directly affect aquatic habitat occupied by Santa Ana sucker and other special-status fish through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor. Direct impacts from temporary construction would be significant absent mitigation primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

With implementation of the RMDP, direct temporary impacts could substantially affect sucker habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct temporary impacts (Loss of Habitat) would be significant absent mitigation. Implementation of the RMDP would not result in the significant alteration to

stream hydrology or limit access to refugia during storm events and therefore direct permanent impacts would be adverse but not significant.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River, construction activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas do not have potential to harm or eliminate occupied Santa Ana sucker habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on sucker habitat; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would not be significant because no impacts are expected to occur as a result of Specific Plan build-out and development outside of the River and aquatic habitat.

Combined Direct and Indirect Permanent Impacts

Only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts are considered to be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The presence of Santa Ana sucker and other special-status fish species is quite variable (ranging from rare or absent in certain reaches of the River, to locally abundant in any given year) in the Project reach, and the species is assumed to be present for this analysis. Implementation of the RMDP, including construction of buried bank structures and bridges, could adversely affect individual Santa Ana suckers during construction work within the River. The potential for impacts from installation of these structures is

increased as the construction is planned for marginal areas of the riparian zone and because this species is known to use lateral backwater refuge habitat and aquatic environments of emergent, fringe vegetation. Direct impacts to the species may occur during construction of RMDP components during the following anticipated activities: stream diversion and/or species exclusion; unauthorized entry of construction equipment into ponded or flowing water; placement of fill in occupied waters; construction dewatering activities; discharge of pollutants, including silt, sediment, fresh concrete, trash/debris, and petroleum or other deleterious materials or pollutants, and/or; unauthorized personnel entry into occupied waters.

These activities could result in the following impacts: inadvertently directing fish to unsuitable habitats, blocking fish passage, stranding of fish in unsuitable habitat, or directing fish into unsuitable flow regimes; causing water quality conditions unsuitable for the fish survival; direct mechanical crushing or entombment of fish; unauthorized collection of individuals; and physical disturbance of river edge habitats

Implementation of the SCP would not directly impact this species within the Project reach or downstream. Implementation of the RMDP could have direct substantial adverse effects on the Santa Ana sucker, interfere with the movement of the species, and substantially reduce the number of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Because the distribution of this species within the Project area is limited to aquatic habitats within the Santa Clara River corridor, build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the impacts to Santa Ana sucker individuals. Project build-out would not have a substantial adverse effect on the Santa Ana sucker; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because physical onsite impacts are not expected to occur due to Specific Plan build-out.

Secondary Impacts

Implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in both short-term secondary effects during construction and long-term effects due to use of RMDP facilities and build-out of the Project area. These impacts could affect the

sucker along the Santa Clara River corridor within the Project area and in downstream populations. Implementation of the SCP would not result in secondary impacts to this species.

Short-term construction-related effects include hydrologic and water quality effects. These short-term impacts could affect Santa Ana sucker and other special-status fish species in the Santa Clara River within the Project area and in downstream populations (same as previously described for direct impacts to individuals).

Long-term effects associated with operation of RMDP facilities and build-out of the Project area due to potential physical changes in the River and increased discharges could include alterations in base flows, timing and duration of flood flows, biochemical changes, condition and composition of the substrate, aquatic and riparian vegetation (including exotic species), and water temperatures as well as increased pollutants from irrigation runoff and increased runoff from roadways. Additional secondary impacts associated with increased human presence include incidental litter and trash from recreation activity; impacts such as fecal material from pet, stray, and feral cats and dogs entering the aquatic system; and increased predation by exotic predators, such as bullfrogs and non-native fish.

These short-term and long-term secondary impacts could have a substantial adverse effect on the Santa Ana sucker; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species (significance criteria 1, 4, and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Overall, implementation of the RMDP under Alternatives 3 through 7 would have similar types of impacts to Santa Ana sucker habitat in the Santa Clara River corridor to those described above for Alternative 2. Although no substantial permanent impacts to Santa Ana sucker habitat would occur through implementation of the RMDP under Alternatives 3 through 7, the Project has the potential to temporarily affect habitat when construction occurs directly in aquatic habitat, such as the active stream channel. Buried bank stabilization would be installed at the riparian–upland interface under all the alternatives, although under Alternative 7 it would be outside the 100-year floodplain and thus would have a substantially reduced risk of temporary impacts to Santa Ana sucker habitat. Bridge construction, in particular, would directly affect aquatic habitat occupied by Santa Ana sucker through direct impacts to the flowing stream, stream diversion, and dewatering when construction is occurring within the River corridor as previously described for Alternative 2. Three bridges would be constructed under Alternative 2.

Bridges would also be constructed under Alternatives 3 through 7: two under Alternatives 3, 4, and 6; three under Alternative 5; and one under Alternative 7 (see **Table 4.5-23**, Key Components of Alternatives, for details). Thus, Alternatives 3, 4, 6, and 7 would have relatively reduced temporary impacts from bridge construction compared to Alternatives 2 and 5.

As described previously for Alternative 2, direct impacts from construction would be significant absent mitigation primarily due to permanent and temporary disturbance to aquatic habitat from construction of RMDP facilities within the Santa Clara River.

ENTRIX (2009) conducted a study of Project-related hydrologic changes in the Santa Clara River and tributaries and their potential effects on special status fish species (using stickleback as an indicator species due to its vulnerability to high flow velocities) for Alternatives 3, 4, 5, 6, and 7. Parameters evaluated included potential changes in floodplain width, floodplain refugia (zero to two fps flow) area, and water velocity, and changes were evaluated during various theoretical flood frequency events including five-, 10-, 20-, 50-, and 100-year occurrences. **Figures 4.5-62a** through **4.5-65b** show the range of floodplain effects for the 20- and 100-year flood events. The following summarizes the results of this analysis.

Alternatives 3 and 4

Implementation of the RMDP within the Project reach of the Santa Clara River would include 31,857 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of river (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch; the construction of bridges at Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-34-A1** through **4.5-35-D2**). The ENTRIX report (2009) indicates that there would be the following impacts to potential Santa Ana sucker floodplain refugia. At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available refugia of 2.1 and 8.9 acres, respectively, for suckers with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in refugia with less than two fps flow at 7.3 acres, 5.3 acres and 5.7 acres, respectively. The decrease in refugia is not expected to be significant as the area lost during these flood events is in terraced agricultural land that is not suitable floodplain refugia for the Santa Ana sucker and other special-status fish species (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 3 and 4 construct one less bridge (Potrero Canyon Road) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 5

Implementation of the RMDP between Salt Creek and Middle Canyon would include 32,334 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon, Long Canyon and Commerce Center Drive; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-36-A1** through **4.5-36-D2**). The ENTRIX report (2009) indicates that there would be the following impacts to potential sucker habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 and 5.5 acres, respectively, for the Santa Ana sucker with less than two fps flow. During the 20-, 50-, and 100-year events, there is a decrease in habitat with less than two fps flow at 12.5 acres, 11.1 acres and 8.9 acres, respectively. The decrease in habitat is not expected to be significant as the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for Santa Ana sucker and other special-status fish (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternatives 5 bridge construction (three bridges) would be similar to Alternative 2 and the direct impacts from construction would be the same with regard to Santa Ana sucker, and therefore would be significant absent mitigation.

Alternative 6

Implementation of the RMDP between Salt Creek and Middle Canyon would include 29,293 linear feet of buried bank stabilization in upland and riparian areas, along the mainstem of the Santa Clara River (approximately one-half of the north bank and one-third of the south bank of the Santa Clara River within Newhall Ranch); the construction of bridges at Potrero Canyon and Long Canyon; and a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-37-A1** through **4.5-37-D2**). The ENTRIX report (2009) indicates that there would be the following impacts to potential sucker habitat (zero to two fps flow). At the five- and 10-year flood events, frequency hydraulic modeling shows that there would be an increase in available habitat of 1.3 and 10.7 acres, respectively, for the Santa Ana sucker with less than two fps flow. During the 20-, 50-, and 100-year events there is a decrease in habitat with less than two fps flow at 7, 4.6, and 2.6 acres, respectively. The decrease in habitat is not expected to be significant as

the habitat lost during these flood events is in terraced agricultural land that is not suitable habitat for the Santa Ana sucker and other special-status fish (ENTRIX 2009). The ENTRIX report (2009) further indicates that accessible floodplain refugia, would not be substantially altered, and therefore, any impact would be less than significant.

Alternative 6 constructs one less bridge (Commerce Center Drive) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

Alternative 7

Implementation of the RMDP between Salt Creek and Middle Canyon would include the construction of one bridge at Long Canyon (with spans removed from the 100-year floodplain); the grading and conversion of 13,956 linear feet of ephemeral drainages to buried storm drains; and construction of a Newhall Ranch WRP outfall in the Santa Clara River (**Figures 4.5-38-A1** through **4.5-38-D2**). Bank protection would be removed from the 100-year floodplain and built in upland areas. All jurisdictional streams and wetlands in the Santa Clara River, Potrero Canyon, Chiquito Canyon, and San Martinez Grande Canyon drainages would be preserved or avoided except where bridges are built to facilitate road crossings. The ENTRIX report (2009) indicates that there would be the following impacts to potential Santa Ana sucker and other special-status fish habitat. The model predicts a projected increase of available refuge habitat (less flow during the five-, 10-, 20-, 50-, and 100-year flood events). The amount of available habitat would be 2.0, 13.3, 22.5, 41.7, and 25.2 acres, respectively. The ENTRIX report (2009) further indicates that there would be no impacts from the installation of these Project components, since the general morphology of the Santa Clara River, adjacent rearing habitat, and high-flow riparian refugia would not be substantially altered.

Alternatives 7 constructs two less bridges (Potrero Canyon Road and Commerce Center Drive) than Alternative 2, however the direct impacts from construction would be similar to Alternative 2, and therefore would be significant absent mitigation.

While implementation of the RMDP under Alternatives 3 through 7 would not have a substantial permanent adverse effect, temporary impacts could substantially affect Santa Ana sucker; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species; or substantially reduce the number or restrict the range of the species. Direct permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts would occur but direct temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

The Santa Ana sucker within the Project area is limited to aquatic habitats within the Santa Clara River. As with Alternative 2, construction activities associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas do not have the potential to harm or eliminate occupied sucker habitat because all activities would be outside the River corridor. Project build-out would not have a substantial adverse effect on the Santa Ana sucker; substantially interfere with the movement of the species; have the potential to substantially reduce the species' habitat; cause the population to drop below self-sustaining levels; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would not be significant because no impacts are expected to occur.

Combined Direct and Indirect Permanent Impacts

For Alternatives 3 through 7, only RMDP-related impacts would result in permanent impacts to suitable habitat for this species, and these impacts are considered to be adverse but not significant. Neither implementation of the RMDP nor build-out of the Specific Plan, VCC, and Entrada planning areas would result in permanent impacts that could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Similar to Alternative 2, implementation of the RMDP would require the construction of bridges and bank stabilization within the River corridor, although the number of bridges varies among the alternatives and bank stabilization under Alternative 7 would be constructed outside the 100-year floodplain, resulting in reduced risk of temporary impacts to Santa Ana sucker habitat under this alternative. Implementation of the RMDP under Alternatives 3 through 7 may result in impacts to sucker individuals if construction occurs during River flows adequate to support these species in work zones in occupied habitat or if construction causes interruptions in water flows. Implementation of the SCP would not directly impact this species.

Implementation of the RMDP under Alternatives 3 through 7 could have a direct substantial adverse effect on the Santa Ana sucker; interfere with the movement of the species; or

substantially reduce the number of the species. Impacts to individuals under Alternatives 3 through 7 would be significant, absent mitigation.

Implementation of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7, would not result in indirect impacts to individuals.

Secondary Impacts

The potential short-term and long-term secondary impacts to the Santa Ana sucker and its habitat under Alternatives 3 through 7 would be similar to those described above for Alternative 2.

Short-term construction-related effects include hydrologic and water quality effects, as described above, that could affect Santa Ana sucker in the Santa Clara River within the Project area and in downstream populations.

Long-term effects associated with operation of RMDP facilities and build-out of the Project area could occur due to potential physical changes in the River and increased discharges and could affect base flows and flood flows and induce biochemical, substrate, temperature, and vegetative changes. Increased human activity could increase litter and trash, and fecal material from pet, stray, and feral cats and dogs may enter the aquatic system. In addition, increased predation by exotic predators, such as bullfrogs and non-native fish, may occur.

These short-term and long-term secondary impacts could have a substantial adverse effect on the Santa Ana sucker; substantially interfere with the movement of the species; reduce the species' habitat; or restrict the range of the species. Secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to Santa Ana sucker: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will prevent impacts to Santa Ana sucker individuals. To prevent impacts to Santa Ana sucker, protective measures will be implemented, such as pre-construction surveys, biological monitoring, exclusion of the species from construction areas using temporary diversion channels, and protection of habitat through facilities design guidelines and BMPs, which will prevent impacts to Santa Ana sucker individuals.

Impacts to individuals, including adults and fry (juvenile fish), could occur during construction as a result of heavy equipment operation for access and grading, or during diversion of Santa

Clara River flows. The Project incorporates numerous elements to avoid and minimize potential impacts to individuals, such as injury or mortality, which would come as a result of direct contact with construction equipment or as an outcome of modification of River habitat, such as flow diversion activities. These measures include pre-construction surveys for any construction activity within 300 feet of River habitat to assure that Santa Ana suckers are avoided or excluded, particularly during the sensitive periods such as spawning or when fry are present. These measures also specify the methods to be used for excluded Santa Ana sucker, as well as how temporary diversion channels will be constructed to assure that adequate rearing habitat is present for suckers during construction. These measures also employ provisions for constructing permanent and temporary stream crossings in the Santa Clara River in a manner that will allow for unimpeded movement upstream and downstream. Numerous water quality measures, such as construction stormwater BMPs (*e.g.*, silt fencing, erosion control materials, sediment basins) and the installation of water quality treatment facilities are also included to minimize impacts from pollutants related to storm runoff during storm events.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR will reduce temporary impacts to Santa Ana sucker habitat through facilities design requirements, which will avoid and minimize impacts to habitat, and conformance with state and federal permits to protect water quality.

The vast majority of sucker habitat in Project reach of the Santa Clara River will be preserved under all of the alternatives. Santa Ana sucker habitat will be impacted through the construction of RMDP facilities, by bridge pier or column footings in particular. It is estimated that one to two pier or column footings would affect Santa Ana sucker habitat at each of the three Santa Clara River bridge crossings (Commerce Center Drive, Long Canyon Road, Potrero Canyon Road) depending on the location of the active channel. The wetted channel of the River is typically between 30 and 50 feet wide, while the River floodplain ranges between 1,000 and 2,000 feet wide. The spacing between piers and columns will be 100 feet, thus approximately one to two pier or column footings per bridge could be placed in the flow of the River and affect Santa Ana sucker habitat. Because River flow will deflect off of these structures and will become realigned, Santa Ana sucker habitat will become re-established after bridge construction is completed. Temporary diversion for the construction of piers and columns will include the establishment of additional habitat downstream to allow for necessary Santa Ana sucker spawning, rearing, and/or oversummering. Bank stabilization features (buried soil cement, rock riprap, or gunite lining) will impact sucker habitat through floodplain alterations caused by changes to flood flows through the Project area. Under severe flood conditions, Santa Ana sucker will seek slow-moving floodplain areas as refugia from high velocity conditions. Although bank stabilization features will sometimes constrict flows through the Project reach, the amount of available flood refugia present during these events is adequate to protect Santa Ana sucker from being flushed out of the Project area.

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR combined will minimize secondary impacts from affecting the Santa Ana sucker and its habitat. Impacts such as increased chemical pollutants, sedimentation, and increased human activity will be mitigated by measures such as the protection and management of the River Corridor SMA, creation of buffer areas between the River Corridor SMA and development, water quality requirements, and restrictions on public access. In addition, the technical studies conducted by ENTRIX (2009) concluded that suitable sucker habitat would not be significantly affected by the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas under any of the alternatives. Further, the Flood Technical Report (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area over the long term as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County. The PACE study determined that the River would still retain sufficient width to allow natural fluvial processes to continue; as a result, the mosaic of habitats in the River that support various special-status fish species would be maintained and the populations of the species within and immediately adjacent to the River corridor would not be substantially affected.

All mitigation measures listed below are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-58 IMPACTS TO INDIVIDUALS – SANTA ANA SUCKER

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the impacts to special-status fish species (primarily unarmored threespine stickleback) through facilities design requirements, pre-development surveys, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

SP-4.6-44 requires that drainages with flows greater than 2,000 cfs have soft bottoms. Bank protection will be of ungrouted rock or buried bank stabilization, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.

SP-4.6-53 requires updated surveys for special-status plants, animals, and vegetation communities as determined necessary by the County whenever construction maps are submitted. Based on the results of the surveys, additional conditions and mitigation measures may be required.

SP-4.6-54 requires that prior to development within or disturbance to occupied threespine stickleback habitat, a formal consultation with the USFWS shall occur.

SP-4.6-55 obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats.

SP-4.6-57 requires that, where bridge construction is proposed and water flow will be temporarily diverted, blocking nets and seines be used to control and remove fish from the area of activity. All fish captured during this operation will be stored in tubs and returned unharmed to the river after construction activities are complete.

SP-4.6-58 requires that in order to limit impacts to water quality, the Specific Plan shall conform to all provisions of required NPDES permits and water quality permits required by the RWQCB.

SP-4.6-59 requires consultations with the County of Los Angeles and CDFG before surveys, after surveys, at subdivision map approval, and prior to development or disturbance to habitats occupied by special-status species. Based on the results the consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will mitigate the impacts to Santa Ana sucker (and other special-status fish species) individuals. These mitigation measures include pre-development focused surveys for special-status fish, coordination with CDFG, channel diversion requirements, biological monitoring, avoidance of flowing water, design guidelines for bridges and culverts, and other BMPs. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation. Specifically, Mitigation Measure WQ-1 in **Section 4.4,** Water Quality, and Mitigation Measures GRR-1 through GRR-7 in **Section 4.2**, Geomorphology and Riparian Resources, provide additional measures to reduce the impacts to Santa Ana sucker and other special-status fish individuals. These mitigation measures include implementation of Project BMPs (including runoff control, conservation of natural areas, minimization of stormwater runoff pollutants of concern, prevention of slope and channel erosion, and education and signage to discourage illegal dumping to the storm drains), and other measures to minimize impacts to riparian resources and geomorphology (peak storm flow control, bridge span and clearance guidelines, maintenance minimization, channel design to minimize erosion potential, sediment and debris control, reintroduction of sediments for beach replenishment, and a Geomorphology Monitoring and Management Plan).

BIO-43 provides for the biological surveying of aquatic habitats within 300 feet of construction sites and access roads, for the presence of special-status fishes at least 10 days prior to

commencing construction unless fish spawn has occurred or juvenile fishes are present, then construction activities would be suspended.

BIO-44 requires that temporary crossings or access across the river be constructed outside of the winter season and not during spring periods when fish spawning is occurring and be consistent with a Stream Crossing and Diversion Plan that outlines the following: the timing and methods for pre-construction fish surveys; a detailed description of the diversion methods; fish exclusion techniques; methods to maintain fish passage; channel habitat enhancement design; fish stranding surveys; and the techniques for the removal of temporary crossings prior to winter storm flows.

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-46 requires that a qualified biologist will inspect diversion or dewatering activities for stranded fish or other aquatic organisms.

BIO-47 provides for the construction of additional slow moving water habitats upstream and downstream of any river crossing or bridge construction area to provide refuge for special status fishes during construction.

BIO-48 requires the design and installation of bridges, culverts, or other structures to not impair the movement of fish and aquatic life and provisions for a low flow channel where velocities are less than 2 foot per second to allow fish passage.

BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows.

BIO-70 provides for construction plans that will include erosion control plans and dust control plans, specifications, and details, along with an overall Project SWPPP. Together, these documents shall include measures to ensure that impacts (*e.g.*, the introduction of chemical pollutants, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology) to vegetation communities and special-status plant species are avoided or minimized during construction.

BIO-71 requires that development areas have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and aquatic wildlife species. Dust control plans shall be prepared prior to initiation of construction activities and shall comply with SCAQMD Rule 403 (SCAQMD 2005).

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Santa Ana sucker individuals would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-59 LOSS OF HABITAT – SANTA ANA SUCKER

Significant prior to mitigation for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the temporary impacts to habitat for special-status fish (primarily unarmored threespine stickleback) through RMDP facilities design requirements, consultation with the USFWS, and conformance with federal and state permits to protect water quality.

SP-4.6-44, SP-4.6-54, SP-4.6-55, and SP-4.6-58, as described above, will be implemented to mitigate impacts related to unarmored threespine stickleback through facilities design requirements, consultation with USFWS, and conformance with state and federal permits related to wetlands and water quality.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the temporary impacts to habitat for the Santa Ana sucker. These measures refer to stream diversions, BMPs, and facilities design. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

Finding of Significance for Loss of Habitat After Mitigation

Permanent impacts (Loss of Habitat) would not be significant because impacts will be predominantly outside of the stream channel and be limited with respect to aquatic habitat. After mitigation, temporary impacts to Santa Ana sucker habitat would be less than significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-60 SECONDARY IMPACTS – SANTA ANA SUCKER

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures to mitigate for both short-term secondary impacts to the Santa Ana sucker, such as altered hydrology and water quality, and long-term secondary impacts, such as potential physical changes in the River; altered base and flood flows; biochemical, substrate, and temperature alterations; vegetative changes, such as invasive plant species; increased human activity; and impacts from pet, stray, and feral cats and dogs.

Most importantly, the River Corridor SMA will be protected and managed to preserve aquatic and riparian resources, including the Santa Ana sucker and its habitat, through a series of mitigation measures. SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats, including aquatic habitats used by the unarmored threespine stickleback.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. These measures will provide a buffer between human activity and aquatic habitats supporting the unarmored threespine stickleback. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-20 requires that all grading perimeters within the River Corridor SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian resources (including aquatic habitats) outside the grading area in the River Corridor SMA.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA.

SP-4.6-27 prohibits grazing in the River Corridor SMA except as a long-term resource management activity. Controls on grazing will help protect water quality in aquatic habitats used by the unarmored threespine stickleback.

In addition, SP-4.6-44 (drainage design), SP-4.6-55 (state and federal wetlands permits), and SP-4.6-58 (NPDES/RWQCB permits), as described above, will be implemented to protect natural flows and water quality, and SP-4.6-54 will require formal consultation with USFWS prior to impacts.

Measures Recommended by EIS/EIR

This EIS/EIR recommends additional mitigation measures to mitigate for secondary impacts to Santa Ana sucker, including short-term impacts to hydrology and water quality and long-term impacts, such as effects on movement; increased human activity; pet, stray, and feral cats and dogs; habitat degradation by exotic plants; and increased predation by exotic predators. Additional mitigation measures are specified in other sections of the EIS/EIR that address water quality, riparian vegetation scour, and sedimentation as described above (Mitigation Measures WQ-1 and GRR-1 through GRR-7). These mitigation measures include implementation of Project BMPs and other measures to minimize impacts to riparian resources and geomorphology.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. Although these measures primarily refer to riparian habitats, the riparian/aquatic communities in the River Corridor SMA will be addressed comprehensively in a manner that protects and enhances habitat for the unarmored threespine stickleback and other special-status fish, including management of invasive species, such as giant reed.

BIO-45, BIO-47 through BIO-49, BIO-70, and BIO-71, as described above, will be implemented to mitigate impacts from chemical pollution, increased sedimentation, increased turbidity, changes in flow, changes in water temperature, and dust.

BIO-63 will be implemented to mitigate impacts by pet, stray, and feral cats and dogs, such as fecal material entering the aquatic system. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas

within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-80 will mitigate for exotic predators. This measure states that the Project applicant shall retain a qualified biologist to conduct monitoring for bullfrog, African clawed frog, and crayfish every five years for 50 years to determine if control is necessary. If control is determined necessary, an eradication plan shall be developed and implemented.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to the Santa Ana sucker and its habitat would not be significant for Alternatives 2, 3, 4, 5, 6, and 7.

LOGGERHEAD SHRIKE (BCC, CSC)

Life History

The loggerhead shrike (*Lanius ludovicianus*) is widespread throughout the United States, Mexico, and portions of Canada. It is a year-long resident species in most of the United States, including from California east to Virginia, south to Florida, and in Mexico. It also summers and breeds in portions of southeast Alberta, southern Saskatchewan, southwest Manitoba, and southern Ontario in Canada; and in portions of Oregon and Washington east to Wisconsin, and portions of Ohio, Kentucky, and Indiana. Northerly breeding populations migrate to warmer locations during winter, including to the Atlantic and south Pacific coasts in Mexico (Small 1994; Yosef 1996). The loggerhead shrike is a resident species in foothills and lowlands throughout California, and remains in the southern portion of the state year round.

Preferred habitats for the loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, or other structures that provide hunting perches with views of open ground, as well as nearby spiny vegetation or man-made structures (such as the top of chain-link fences or barbed wire) that provide a location to skewer prey items. Loggerhead shrikes occur most frequently in riparian areas along the woodland edge, grasslands with sufficient perch and butcher sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas, and can sometimes be found in mowed roadsides, cemeteries, and golf courses. Loggerhead shrikes occur only rarely in heavily urbanized areas. For nesting, the height of shrubs and presence of canopy cover are most important (Yosef 1996).

Loggerhead shrikes prey mainly on invertebrates and small to medium-sized reptiles, but will also take amphibians, fish, small birds and mammals, and carrion. In the west, their diet consists mostly of insects. They are opportunistic feeders and adjust their diet based on prey availability.

The loggerhead shrike's breeding territory is usually the same as its winter territory and it may defend territories year round (Yosef 1996). In Contra Costa and Kern counties in California, territories averaged 18.7 acres (Yosef 1996). Loggerhead shrikes are monogamous and individuals may remain paired during the winter in sedentary populations. In California, they lay four to eight eggs from March into May (Yosef 1996). Eggs hatch in 14 to 15 days and young are fledged after 18 to 19 days (Yosef 1996). The nest site location is chosen based more on the cover than the particular vegetation species. They are usually constructed in a dense shrub or tree well below the crown and are well concealed (Yosef 1996). The heights of the nests vary depending on the shrub or tree used for nesting, but the height of the nest increases as the breeding season progresses, probably due to weather conditions (Yosef 1996).

In addition to habitat loss, fragmentation, and degradation, other urban-related factors may be contributing to a decline in loggerhead shrike populations. Shrikes often prefer roadsides for foraging and sometimes nesting. The increase in roads and vehicular traffic since the 1940s has

been suggested to be a major factor in the population declines as a result of vehicle collisions (Yosef 1996). Additionally, predators are usually more abundant near roadsides, and loggerhead shrikes can be prey for domestic cats and urban-adapted mesopredators such as opossums and raccoons (Yosef 1996). Extensive areas of monoculture cultivation and associated heavy pesticide use also have contributed to the decline of loggerhead shrike populations (Bloom Biological 2007A). Adults and particularly juveniles are susceptible to ingestion of insecticides, such as dieldrin (banned in 1987), *via* invertebrate ingestion (Hall *et al.* 1997). Development-related increases in European starlings also may result in competition for resources, and red imported fire ants associated with increased water availability from development prey on nestlings (Yosef 1996). This impact by fire ants also suggests that nestlings may be vulnerable to Argentine ants.

Survey Results

The loggerhead shrike is a breeding resident on site (Bloom Biological 2007A, 2008). It has been observed to be fairly common within California sagebrush scrub and grasslands in the Specific Plan area (Guthrie 1993B, 1996A, 2000A, 2000B, 2002C, 2004A, 2004E, 2005B; Labinger *et al.* 1995; Lemons 2008; Bloom Biological 2007A, 2008) and has also been observed within the VCC planning area (Guthrie 1995A, 2004B), Salt Creek (Dudek and Associates 2006B), and the Entrada planning area (Guthrie 2000D, 2004G; Dudek and Associates 2006E). It was observed regularly in Potrero Canyon, Tapo Canyon, near Magic Mountain ranch gate, and Wolcott agricultural fields (Bloom Biological 2008). It was also observed nesting south of Potrero Mesa and west of the Ventura County line near an agriculture field adjacent to the Santa Clara River in 2007 (Bloom Biological 2007A), and it was thought to have nested within and adjacent to the Entrada planning area (southeast of Six Flags Magic Mountain Amusement Park) (Guthrie 2000D, 2004G).

Suitable nesting and foraging habitat on site includes alluvial scrub, arrow weed scrub, Mexican elderberry, herbaceous wetland, river wash, agriculture, big sagebrush scrub, chaparral (undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral), coastal scrub alliances and associations, California annual grassland, coyote brush scrub, *Eriodictyon* scrub, purple needlegrass, valley oak/grass, coast live oak woodland, valley oak woodland, and California walnut woodland vegetation communities. A total of 12,536 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 257 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.0% of these habitats on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats). A total of 133 acres would be temporarily impacted.

Because the loggerhead shrike is still a wide-ranging species and because the construction of RMDP facilities would be phased over a long period of time, thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. The permanent loss of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. These impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 4,292 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 34.2% of these habitats on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of suitable habitat on site for the loggerhead shrike would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. The removal of 34.2% of total nesting and foraging habitat on site would have the potential to have a substantial adverse effect *via* habitat modification; substantially reduce the habitat of the species on site or rangewide; and threaten to eliminate the species on site or rangewide (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 4,593 acres (36.3%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect *via* habitat modification; substantially reduce the habitat of the species on site or rangewide; and threaten to eliminate the species on site or rangewide (significance criteria 1, 4, and 7). The combined permanent direct and indirect impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The loggerhead shrike is known to be a breeding resident in the Project area. Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species. Construction/grading activities, such as vegetation clearing, occurring during the nesting season could result in destruction of nests and the resulting loss of eggs and/or young. In addition, construction activities could alter the loggerhead shrike's foraging behavior, potentially affecting provisioning of young, potentially reducing survivorship and reproductive success. Implementation of the SCP would not directly impact this species. Construction/grading activities such as vegetation clearing occurring during the nesting season could result in destruction of nests and the resulting loss of eggs and/or young or alteration of foraging behavior (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. Construction and/or grading activities may occur during the nesting season and could result in impacts to eggs or young and alteration of foraging behavior (significance criteria 1 and 4). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Potential short-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, nighttime lighting, and increased

human activity, which could modify essential behaviors, such as nesting, foraging, and care of young. These behaviors, in turn, could result in nest abandonment, lowered nest and egg production, and increased mortality of nestlings and juveniles.

Long-term secondary impacts could result from urbanization of lands within and adjacent to suitable nesting and foraging habitat in the Project site. Potential secondary effects include habitat fragmentation and reduced nest success due to nighttime lighting; noise disturbance; and harassment/disturbance by humans, especially if such disturbances occur during the nesting season; and predation by pet, stray, and feral cats and dogs as well as other mesopredators. The use of pesticides to control invertebrates and small mammals within and adjacent to open foraging areas could result in secondary poisoning and loss of prey for the species. An increase in traffic would likely result in increased incidence of vehicle collisions.

These short-term and long-term secondary effects would have a substantial adverse effect on the species; substantially reduce habitat quality on site or rangewide; and threaten to eliminate the species on site or rangewide (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts therefore would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the loggerhead shrike (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 233 acres (1.9%) of permanent loss and 171 acres of temporary loss;
- Alternative 4 – 225 acres (1.8%) of permanent loss and 172 acres of temporary loss;
- Alternative 5 – 267 acres (2.1%) of permanent loss and 167 acres of temporary loss;
- Alternative 6 – 252 acres (2.0%) of permanent loss and 172 acres of temporary loss; and
- Alternative 7 – 121 acres (1.0%) of permanent loss and 443 acres of temporary loss.

Compared to Alternative 2, which would result in 257 acres (2.0%) of permanent habitat loss and 133 acres of temporary impacts, the permanent loss of habitat under Alternatives

3, 5, and 6 would not be substantially different, Alternative 4 would be somewhat less, and Alternative 7 would be somewhat less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat higher and Alternative 7 would be substantially higher. The large difference between Alternative 7 and the other alternatives for permanent and temporary loss of habitat is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the loggerhead shrike (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 4,058 acres (32.4%) of permanent loss;
- Alternative 4 – 3,914 acres (31.1%) of permanent loss;
- Alternative 5 – 3,830 acres (30.6%) of permanent loss;
- Alternative 6 – 3,419 acres (27.3%) of permanent loss; and
- Alternative 7 – 2,908 acres (23.2%) of permanent loss.

Compared to Alternative 2, which would result in 4,292 acres (34.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different or would be somewhat less than Alternative 2, but still substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the loggerhead shrike:

- Alternative 3 – 4,291 acres (34.2%) of permanent loss;
- Alternative 4 – 4,140 acres (33.0%) of permanent loss;
- Alternative 5 – 4,097 acres (32.7%) of permanent loss;
- Alternative 6 – 3,671 acres (29.3%) of permanent loss; and
- Alternative 7 – 3,029 acres (24.2%) of permanent loss.

Compared to Alternative 2, which would result in 4,549 acres (36.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, as well as additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the loggerhead shrike occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to loggerhead shrike individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual loggerhead shrikes occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related noise, ground vibration, fugitive dust, nighttime lighting, and increased human activity. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than implementation of the RMDP and the SCP because of the much larger area of impact.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include habitat fragmentation, increased human activity, increased predation, secondary poisoning and loss of prey from pesticides, and increased incidence of vehicle collisions, as described above for Alternative 2.

These secondary impacts would permanently reduce the loggerhead shrike populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts would be significant, absent mitigation, under Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to loggerhead shrike: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by loggerhead shrikes has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also cause abandonment of nests due to human activity and noise. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the loggerhead shrike resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 3,029 acres (24.2%) under Alternative 7 to 4,549 acres (36.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for nesting and foraging. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the loggerhead shrike in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,101 acres of suitable habitat for the loggerhead shrike in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, nesting and foraging activities by the loggerhead shrike could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; increased noise; lighting; pesticides, which may cause secondary poisoning and loss of prey; human disturbances of nest sites; predation by pet, stray, and feral cats and dogs and other mesopredators; and increased vehicle collisions. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 6,101 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide loggerhead shrikes with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect loggerhead shrikes by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey.

The specific mitigation measures for the loggerhead shrike are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-61 IMPACTS TO INDIVIDUALS – LOGGERHEAD SHRIKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of loggerhead shrike individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to loggerhead shrike individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to loggerhead shrike individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-62 LOSS OF HABITAT – LOGGERHEAD SHRIKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the loggerhead shrike through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 539 acres of suitable habitat for loggerhead shrike. The High Country SMA will preserve and enhance at least 4,112 acres of suitable habitat for the loggerhead shrike.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for loggerhead shrike through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site, providing suitable foraging habitat for the loggerhead shrike. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the loggerhead shrike would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-63 SECONDARY IMPACTS – LOGGERHEAD SHRIKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the loggerhead shrike associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as habitat fragmentation, abandonment of nests from human activity, greater vulnerability to nocturnal predators as a result of nighttime lighting, and vehicle collisions. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for long-term habitat fragmentation effects, increased human activity, and increased vehicle collisions.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to loggerhead shrike, including short-term construction-related dust, noise, ground vibration, and increased human activity, as well as long-term habitat fragmentation edge-effects; increased human activity; increased vehicle collisions; and greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 through BIO-21, as described above, will help reduce impacts to loggerhead shrike from habitat fragmentation, increased human activity, and increased vehicle collisions through the dedication of the 1,518-acre Salt Creek area to the public and management in conjunction with the 4,205-acre High Country SMA; preservation of coastal scrub within the High Country SMA, Salt Creek area, and River Corridor SMA, which includes at least 2,000 acres of coastal scrub foraging habitat for the loggerhead shrike; and coastal scrub restoration , if necessary.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the loggerhead shrike would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

LONG-EARED OWL (NESTING) (CSC)

Life History

The long-eared owl (*Asio otus*) occurs in North America, Europe, Asia, and northern Africa between elevations from near sea level to over 2,000 meters (6,560 feet) AMSL (Zeiner *et al.* 1990A). In North America, this species breeds from British Columbia east across Canada and the United States and south to southern California, southern Arizona, and northern Mexico. It also winters in most of its breeding range, except in the northernmost areas. The long-eared owl's wintering range extends from southern Canada and northern New England to the Gulf states and to the Jalisco, Michoacan, Guerrero, and Oaxaca states in Mexico (Marks *et al.* 1994).

The long-eared owl is an uncommon year-long resident throughout most of California, with the exception of the Central Valley and southern California desert regions, where is it generally a winter visitor (Zeiner *et al.* 1990A). Along the coastline of southern California, the long-eared owl may be a resident breeder (Marks *et al.* 1994; Bloom 1994) or a rare winter visitor (Garrett and Dunn 1981). It is known to nest successfully in the Santa Monica Mountains to the south of the Project area (Bloom Biological 2007A).

The long-eared owl primarily uses riparian habitat for roosting and nesting, but can also use live oak thickets and other dense stands of trees (Zeiner *et al.* 1990A). It appears to be more associated with forest edge habitat than with open habitat or forest habitat (Holt 1997). The long-eared owl usually does not hunt in the woodlands where it nests, but in open space areas such as fields, rangelands, and clearings. At higher elevations, the species is found in conifer stands that are usually adjacent to more open grasslands and shrublands (Marks *et al.* 1994). In California, long-eared owls also nest in dense or brushy vegetation amid open habitat (Bloom 1994). Long-eared owls have also been known to nest in caves, cracks in rock canyons, and in artificial wicker basket nests (Marks *et al.* 1994; Garner and Milne 1997).

The long-eared owl eats mostly voles and other rodents, though it also occasionally eats birds and other vertebrates (Armstrong 1958). It typically begins hunting before sunset, especially during the nesting season and while feeding its young (Bayldon 1978).

The long-eared owl uses abandoned crow, magpie, hawk, heron, and squirrel nests in a variety of trees with dense canopy (Call 1978; Marks 1986). The nest is usually three to 15 meters (9.8 to 49.2 feet) above the ground; rarely is the nest on the ground or in a tree cavity (Karalus and Eckert 1974). Breeding season extends from early March to late July (Call 1978). Pairs of long-eared owls have one brood per year with a clutch of three to eight eggs typically laid in April and May and incubated for 21 to 28 days (Zeiner *et al.* 1990A). Nestlings fledge in about 50 days or less and are usually independent from their parents by about two months.

In Wyoming, the breeding home range of this species in riparian habitat varied from 34 to 106 hectares (84.0 to 261.9 acres) and averaged 51 hectares (126.0 acres) (Craighead and Craighead 1956).

Resident populations of the long-eared owl in California have been declining since the 1940s, especially in southern California (Grinnell and Miller 1944; Remsen 1978; Bloom 1994). Habitat destruction, including grasslands used for foraging, fragmentation of riparian nesting habitat and live oak groves, and proximity to urban development are cited as major factors in the decline of populations in California (Marks *et al.* 1994; Bloom 1994; Remsen 1978). Nesting long-eared owls appear to be particularly sensitive to human activity. Human disturbance usually flushes females from active nests, and while females usually return within 10 minutes of the disturbance, eggs and hatchlings are vulnerable to predation while the nest is exposed (Marks 1986). Other urban-related factors that could affect long-eared owls are nighttime lighting, which may disrupt activity patterns and expose nests to nocturnal predators; use of pesticides, which may cause secondary poisoning and reduction or loss of prey; and predation and harassment by pet, stray, and feral cats and dogs.

Survey Results

Avian surveys were conducted in the riparian areas of the Santa Clara River and Castaic Creek from 1988 through 2008. These surveys were conducted by Guthrie from 1988 through 2006 along Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River corridor by Labinger *et al.* and Labinger and Greaves in 1994 and 1996 through 1998 (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, and portions of the River corridor adjacent to the Project site by Dudek and Associates in 2005 and 2006 (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River corridor from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and (2007A, 2008). Surveys for upland bird species were conducted throughout the Project area and in nearby areas between 1995 and 2008. Surveys in the Specific Plan area were conducted by a variety of consulting firms and covered the Landmark Village, Mission Village, and Homestead East and West areas as well as Potrero, Long, and Chiquito canyons and the upland habitats along the Santa Clara River (Bloom Biological 2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Bloom Biological Inc. surveyed along the Santa Clara River and in upland areas throughout the Project area in 2007 and 2008 (Bloom Biological 2008). Upland surveys have also been

conducted in the VCC planning area (Dudek and Associates 2006D; Guthrie 2004B) and Entrada planning area (Dudek and Associates 2006E; Guthrie 2004G).

The long-eared owl has been observed on site once during these surveys. Dudek and Associates observed a long-eared owl during wildlife transect surveys within the Specific Plan area in coast live oak woodland south of Via Canyon during the fall of 2005 (2006B). The observed individual was not nesting. Bloom Biological, Inc. (2007A) conducted focused surveys for the long-eared owl in the Landmark Village area of the Specific Plan area and failed to observe the species, although suitable nesting habitat was present.

Based on the numerous surveys in the Project area, the long-eared owl is expected to occur as a regular migrant and/or a winter visitor to the region, including the Project area, and could possibly breed on site within suitable habitat areas.

Suitable foraging habitat for the long-eared owl in the Project area includes agriculture, California annual grassland, purple needlegrass, and valley oak/grass, totaling 4,379 acres. Suitable nesting habitat includes oak woodlands (coast live oak woodland, mixed oak woodland, valley oak woodland), southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub, totaling 1,451 acres in the Project area. The combined suitable foraging and nesting habitat in the Project area totals 5,830 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 189 acres of suitable foraging and nesting habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.2% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). Of these impacts, 141 acres are foraging habitat, representing 3.2% the 4,379 acres of this habitat on site. The remaining 48 acres

of impact are nesting habitat, representing 3.3% of the 1,451 acres of this habitat on site. A total of 123 acres of suitable foraging and nesting habitat would be temporarily impacted, of which 77 acres are foraging habitat and 46 acres are nesting habitat.

The long-eared owl is still a widely distributed and common species throughout its range. It has been observed once on site, but has not been documented to nest. Because the construction of RMDP facilities would be phased over a long period of time, thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time**.** In addition, this species has not been documented to nest on site, and, therefore, nesting activities are unlikely to be disrupted. The loss of 3.2% of suitable foraging and nesting habitat as a result of construction/grading activities therefore would not be a substantial direct adverse effect on the habitat of a special-status species; impede the use of a native wildlife nursery site; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,283 acres of suitable foraging and nesting habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 39.2% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). Of these impacts, 2,211 acres are foraging habitat, representing 50.5% of the 4,379 acres of this habitat on site. The remaining 73 acres of impact are nesting habitat, representing 5.0% of the 1,451 acres of this habitat on site.

The long-eared owl is still relatively widespread and common throughout its range. However, the overall loss of 39.2% of foraging and nesting habitat, including 50% of foraging habitat, would be a substantial habitat loss on site because the long-eared owl would be precluded from foraging in the substantial portion of the Project area. In particular, the loss of 50% of the 4,379 acres of foraging habitat would be considered a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Foraging Habitat) would be significant, absent

mitigation. The loss of 5% of the 1,451 acres of nesting habitat would be adverse, but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable foraging and nesting habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,472 acres (42.4%). Of these impacts, 2,351 acres are nesting and foraging habitat, representing 53.7% of this habitat on site. The remaining 120 acres of impact are nesting habitat, representing 8.3% of this habitat on site.

The combined direct and indirect loss of 42.4% of foraging and nesting habitat, including 53.7% of the 4,379 acres of foraging habitat and 8.3% of the 1,451 acres of nesting habitat, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Foraging and Nesting Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The long-eared owl is highly mobile, and, therefore, it is unlikely that RMDP-related construction activities would result in injury or mortality of adults. Although this species has not been observed nesting within the RMDP area, suitable nesting habitat for this species is present and the Project area is within its known breeding range. Therefore, construction and/or grading activities occurring during the nesting season could destroy active nests of this species, resulting in impacts to eggs and young. In addition, construction activities could cause temporary or permanent nest abandonment, resulting in increased vulnerability of active nests to predation and general exposure. Implementation of the SCP would not directly impact this species.

Impacts to young and/or eggs as a result of nest destruction or nest abandonment during construction/grading activities would be considered to have a substantial direct adverse effect on this species; impede the use of a native wildlife nursery site (nest); or threaten to eliminate the species on site (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of nesting habitat for this species, thus, construction and/or grading activities occurring during the nesting season could inadvertently destroy active nests of this species or cause nest abandonment, resulting in impacts to eggs and/or young.

The potential injury or mortality of individual birds, specifically loss of young and/or eggs during construction/grading activities as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Although the long-eared owl has not been observed to nest on site, there is suitable nesting habitat present and it is considered to have potential to nest in the Project area. Potential short-term secondary impacts associated with construction include noise, ground vibration, dust, nighttime lighting, and human activity. If the long-eared owl does nest on site and construction occurs during the nesting season, these impacts may decrease reproductive success by interfering with hunting, adult natal care, or by causing adults to abandon nests.

Potential long-term development-related secondary impacts include habitat fragmentation and isolation of some local populations of long-eared owls, making them more vulnerable to extirpation; disruption of nocturnal activities or a decrease in reproductive success due to nest abandonment caused by human disturbance; greater vulnerability to predation by pet, stray, and feral cats and dogs, and other mesopredators within approximately 200 feet of the urban–open space edge; and loss of prey and secondary poisoning from the use of pesticides.

Both these short-term and long-term secondary impacts would have a substantial adverse effect on this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable foraging and nesting habitat for long-eared owl (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 161 acres (2.8%) permanent loss and 152 acres of temporary loss of foraging and nesting habitat, including
  - 127 acres (2.9%) of permanent loss and 107 acres of temporary loss of foraging habitat
  - 34 acres (2.3%) of permanent loss and 45 acres of temporary loss of nesting habitat;
- Alternative 4 – 151 acres (2.6%) permanent loss and 160 acres of temporary loss of foraging and nesting habitat, including
  - 117 acres (2.7%) of permanent loss and 118 acres of temporary loss of foraging habitat
  - 35 acres (2.4%) of permanent loss and 43 acres of temporary loss of nesting habitat;
- Alternative 5 – 195 acres (3.3%) permanent loss and 147 acres of temporary loss of foraging and nesting habitat, including
  - 151 acres (3.4%) of permanent loss and 99 acres of temporary loss of foraging habitat
  - 44 acres (3.0%) of permanent loss and 48 acres of temporary loss of nesting habitat;
- Alternative 6 – 183 acres (3.1%) permanent loss and 150 acres of temporary loss of foraging and nesting habitat, including
  - 150 acres (3.4%) of permanent loss and 107 acres of temporary loss of foraging habitat
  - 34 acres (2.3%) of permanent loss and 44 acres of temporary loss of nesting habitat; and

- Alternative 7 – 81 acres (1.4%) permanent loss and 381 acres of temporary loss of foraging and nesting habitat, including
  - 68 acres (1.6%) of permanent loss and 344 acres of temporary loss of foraging habitat
  - 13 acres (0.9%) of permanent loss and 37 acres of temporary loss of nesting habitat.

Compared to Alternative 2 for foraging and nesting habitat, which would result in 189 acres (3.2%) of permanent loss and 123 acres of temporary impacts, Alternatives 5 and 6 would not be substantially different compared to Alternative 2, Alternatives 3 and 4 would have somewhat reduced permanent impacts, and Alternative 7 would have substantially reduced impacts. For temporary impacts, Alternatives 3 through 6 would have somewhat higher impacts and Alternative 7 would have substantially higher impacts. This general pattern is similar for permanent impacts to foraging habitat. Compared to Alternative 2, which would have 141 acres of permanent impacts, Alternatives 3 and 4 would have somewhat reduced impacts, Alternatives 5 and 6 would have marginally higher impacts, and Alternative 7 would have substantially reduced impacts. For temporary impacts to foraging habitat, compared to Alternative 2, which would have 77 acres of impact, Alternatives 3 through 6 would have somewhat higher impacts and Alternative 7 would have substantially higher impacts. For nesting habitat, compared to Alternative 2, which would have 48 acres of permanent impact, Alternatives 3 through 6 would have somewhat reduced impacts and Alternative 7 would have substantially reduced impacts. For temporary impacts to nesting habitat, compared to Alternative 2, which would have 46 acres of impact, Alternatives 3 through 6 would have not substantially different to marginally different impacts and Alternative 7 would have somewhat reduced impacts.

The relatively greater difference between Alternative 7 and the other alternatives for foraging and nesting habitat is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

The overall direct permanent and temporary loss of foraging and nesting habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be less than or similar in magnitude compared to Alternative 2. The long-eared owl has been observed once on site, but has not been documented to nest. Because the construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable habitat would be available for this species in the River Corridor SMA, High Country SMA, and Salt Creek area at any given time**,** these impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable foraging and nesting habitat for long-eared owl (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 2,159 acres (37.0%) permanent loss of foraging and nesting habitat, including
  - 2,097 acres (47.9%) of permanent loss of foraging habitat
  - 62 acres (4.3%) of permanent loss of nesting habitat;
- Alternative 4 – 2,078 acres (35.6%) permanent loss of foraging and nesting habitat, including
  - 2,021 acres (46.1%) of permanent loss of foraging habitat
  - 57 acres (3.9%) of permanent loss of nesting habitat;
- Alternative 5 – 2,043 acres (35.0%) permanent loss of foraging and nesting habitat, including
  - 1,985 acres (45.3%) of permanent loss of foraging habitat
  - 57 acres (3.9%) of permanent loss of nesting habitat;
- Alternative 6 – 1,887 acres (32.4%) permanent loss of foraging and nesting habitat, including
  - 1,855 acres (42.4%) of permanent loss of foraging habitat
  - 32 acres (2.2%) of permanent loss of nesting habitat; and
- Alternative 7 – 1,549 acres (26.6%) permanent loss of foraging and nesting habitat, including
  - 1,515 acres (34.6%) of permanent loss of foraging habitat
  - 34 acres (2.3%) of permanent loss of nesting habitat.

Compared to Alternative 2 for foraging and nesting habitat, which would result in 2,283 acres (39.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for separate permanent impacts to nesting and foraging habitat under Alternatives 3 through 7. Compared to Alternative 2, which would have 2,211 acres (50.5%) of permanent loss of foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2, which would have

73 acres (5.0%) of permanent loss of nesting habitat, Alternatives 3 through 7 also would have reduced impacts. Overall for foraging and nesting habitat, Alternatives 4 through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat in particular; impacts to foraging habitat would range from 34.6% for Alternative 7 to 47.9% for Alternative 3. These impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable foraging and nesting habitat for long-eared owl:

- Alternative 3 – 2,320 acres (39.8%) permanent loss of foraging and nesting habitat, including
  - 2,224 acres (50.8%) of permanent loss of foraging habitat
  - 96 acres (6.6%) of permanent loss of nesting habitat;
- Alternative 4 – 2,229 acres (38.2%) permanent loss of foraging and nesting habitat, including
  - 2,137 acres (48.8%) of permanent loss of foraging habitat
  - 92 acres (6.3%) of permanent loss of nesting habitat;
- Alternative 5 – 2,237 acres (38.4%) permanent loss of foraging and nesting habitat, including
  - 2,136 acres (48.8%) of permanent loss of foraging habitat
  - 101 acres (7.0%) of permanent loss of nesting habitat;

- Alternative 6 – 2,070 acres (35.5%) permanent loss of foraging and nesting habitat, including
  - 2,004 acres (45.8%) of permanent loss of foraging habitat
  - 65 acres (4.5%) of permanent loss of nesting habitat; and
- Alternative 7 – 1,629 acres (27.9%) permanent loss of foraging and nesting habitat, including
  - 1,582 acres (36.1%) of permanent loss of foraging habitat
  - 47 acres (3.2%) of permanent loss of nesting habitat.

Compared to Alternative 2 for foraging and habitat, which would result in 2,472 acres (42.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat when considered separately. Compared to Alternative 2 for foraging habitat, which would have 2,351 acres (53.7%) of permanent loss, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for nesting habitat, which would have 120 acres (8.3%) of permanent loss, Alternatives 3 through 7 also would have reduced impacts. Overall for foraging and nesting habitat, Alternatives 4 through 7 would have fewer combined direct and indirect permanent impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts (except for Alternatives 4 and 5 where Alternative 5 would be marginally higher) due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat in particular; combined impacts to foraging habitat would range from 36.1% for Alternative 7 to 50.8% for Alternative 3. These combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to long-eared owl individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Suitable nesting habitat is present on site and construction/grading activities could result in impacts to eggs or young where long-eared owls are nesting as a result if nest destruction or abandonment of the nest. Impacts to long-eared owl individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have essentially the same construction activities and long-term effects.

Short-term effects include construction-related noise, ground vibration, lighting, and disturbance from human activity that could disrupt natal care and cause nest abandonment. Urban development could result in long-term secondary impacts, such as increased human activity; nighttime lighting; harassment by pet, stray, and feral cats and dogs; and secondary poisoning and loss of prey from use of pesticides.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to long-eared owl: (1) impacts to individuals; (2) loss of suitable nesting and foraging habitat; and (3) secondary impacts to individuals and suitable nesting and foraging habitat outside the Project footprint.

Although nesting by long-eared owls has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, suitable nesting habitat (riparian, oak woodlands, and oak/grass) is present on site and it is assumed for the purpose of this analysis that nesting could occur. While adults are highly mobile and likely able to escape direct injury or

mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings or nest sites are abandoned due to construction-related activities. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable nesting and foraging habitat for the long-eared owl resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,629 acres (27.9%) under Alternative 7 to 2,422 acres (42.2%) under Alternative 2. This would be a substantial loss of suitable nesting and foraging habitat for this species and probably would alter its use of the Project area for nesting and foraging if present. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable nesting and foraging habitat to support the long-eared owl in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 2,474 acres of suitable nesting and foraging habitat for the long-eared owl in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, nesting and foraging activities by the long-eared owl could be adversely affected in the short-term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators and exposure. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 2,474 acres of suitable nesting and foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide long-eared owls with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, homeowner education and regarding special-status resources in preserved natural habitat areas will help protect long-eared owls by allowing to nest and forage without

disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey.

The specific mitigation measures for the long-eared owl are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-64 IMPACTS TO INDIVIDUALS – LONG-EARED OWL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of long-eared owl individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to long-eared owl individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to long-eared owl individuals would adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-65 LOSS OF HABITAT – LONG-EARED OWL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for long-eared owl through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 411 acres of suitable foraging and nesting habitat for long-eared owl**.** The High Country SMA will preserve and enhance 1,394 acres of suitable foraging and nesting habitat for long-eared owl.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be

planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for long-eared owl through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat shall be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the long-eared owl would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-66 SECONDARY IMPACTS – LONG-EARED OWL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on long-eared owl associated with build-out of the Specific Plan, VCC, and Entrada planning areas such as habitat fragmentation, increased human activity, and nighttime lighting. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for the effects of habitat fragmentation and increased human activity.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to long-eared owl, including short-term construction-related noise, ground vibration, dust, and increased human activity, as well as long-term habitat fragmentation; increased human activity;

harassment by pet, stray, and feral cats and dogs; and secondary poisoning and loss of prey due to the use of pesticides.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest sites and providing for buffers between nests and construction activities.

BIO-1 through BIO-16 and BIO-19, as described above, will mitigate for habitat fragmentation and increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides (including rodenticides and insecticides) and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to long-eared owl would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

NORTHERN HARRIER (NESTING) (CSC)

Life History

The northern harrier (*Circus cyaneus*) has a wide geographic range throughout much of the northern continents. Its breeding range includes northern Alaska and Canada south to the northern Baja California peninsula in Mexico and east to the southern parts of Nevada, Utah, and the northern parts of New Mexico and Texas. It also breeds in southern Kansas, central Iowa, central Wisconsin, southern Michigan, southern Pennsylvania, southeast Virginia, and probably northeast North Carolina. The northern harrier is common along the west coast in mountain and desert regions. Northern harriers winter throughout much of Canada, the United States, and the Caribbean islands (Macwhirter and Bildstein 1996).

The northern harrier occurs throughout California from sea level to 3,000 meters (9,842 feet) AMSL as a widespread winter migrant (CDFG 2008A; Zeiner *et al.* 1990A). The northern harrier is also a permanent resident in coastal areas, the northeastern plateau, the Central Valley, and the Sierra Nevada, where its elevational range as a breeder reaches 1,700 meters (5,577 feet) AMSL (Zeiner *et al.* 1990A). Breeding populations are also known from around San Francisco Bay and in the Mono Lake area (Gaines 1977; CDFG 2008A). Most of the breeding population in California occurs in ungrazed parts of the state and in federal wildlife refuges (CDFG 2008A).

Northern harriers use a wide variety of open habitats in California, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, estuaries, flood plains, and marshes (Macwhirter and Bildstein 1996). The species also forages over coastal sage scrub and other open scrub communities (Bloom Biological 2007A). Nesting areas are associated with marshes, pastures, grasslands, prairies, croplands, desert shrub-steppe, and riparian woodland (Macwhirter and Bildstein 1996). Winter habitats similarly include a variety of open habitats dominated by herbaceous cover. Northern harrier populations are most concentrated in areas with low vegetation.

Northern harriers almost always forage on the wing, by flying slowly and low to the ground, sometimes hovering, sometimes soaring. They take small and medium-sized prey, including birds, rodents, reptiles, and frogs, but also some insects, such as beetles, grasshoppers, crickets, and locusts in small amounts (Macwhirter and Bildstein 1996).

Breeding occurs from March to May. Nests are located in patches of dense and tall vegetation, particularly wetlands and dense grasslands, and have a clutch size of four to six eggs that are incubated for 30 to 32 days. Chicks typically fledge at four to five weeks by making brief flights near the nest (Macwhirter and Bildstein 1996).

Harriers begin dispersing from breeding grounds in August through December (Cripe 2000), and migrate (if such migration occurs) north between late February and early May (Macwhirter and

Bildstein 1996). Their densities and territory size vary due to fluctuations in habitat type and local prey availability (Macwhirter and Bildstein 1996; Cripe 2000).

This species is primarily threatened by extensive loss of habitat (Cripe 2000), including freshwater and estuarine wetland breeding habitat and grasslands (Macwhirter and Bildstein 1996). In agricultural areas, nests are destroyed by livestock and other agricultural activities (Zeiner *et al.* 1990A). Overgrazing of pastures and pesticide use decreases prey abundance (Macwhirter and Bildstein 1996). Additionally, northern harriers have been heavily affected by widespread use of DDT, which causes eggshell thinning, and other chlorinated hydrocarbon pesticides (Terres 1980; Henny and Wight 1972). Predators of northern harriers' eggs and nestlings include crows and ravens, populations of which may increase during construction activities and over the long term in urbanized areas. Both nesting and wintering birds may avoid or abandon suitable habitat near areas of active use by humans (Macwhirter and Bildstein 1996). In addition, vehicle collisions may be a significant threat to northern harriers because they fly slowly and low to the ground during foraging.

Survey Results

Surveys for riparian and upland birds have been conducted for multiple years throughout most of the Project area. Riparian bird surveys were conducted by Guthrie from 1988 through 2006 along Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River corridor by Labinger *et al.* in 1994 and 1996 through 1998 (1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek area, High Country SMA, and portions of the River corridor adjacent to the Project area by Dudek and Associates in 2005 and 2006 (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River corridor from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (2007A, 2008). Upland bird species surveys were conducted throughout the Project area and in nearby areas between 1995 and 2007 throughout the Specific Plan area (Bloom Biological 2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Upland surveys have also been conducted in the VCC planning area (Dudek and Associates 2006D; Guthrie 2004B) and Entrada planning area (Dudek and Associates 2006E; Guthrie 2004G). Other areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project area on the south and east (Guthrie 2004C), the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I), the Riverpark site (now referred to as "River Village")

upstream of the Specific Plan area (Compliance Biology 2003A), and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

The northern harrier has been observed in or near the Project area infrequently during the 20 years of surveys. Most of the observations of this species were probably of wintering and migrating individuals, and these surveys are considered adequate to establish that this species is at least an occasional winter migrant in the Project area. Although the northern harrier has never been documented breeding on the site, many populations in California are resident breeders (Cripe 2000; Macwhirter and Bildstein 1996), and the species is known to nest in coastal areas. The northern harrier is a local breeder in the region and has the potential to nest on site (Bloom Biological 2007A). Because the breeding population is much reduced in the southern California coastal areas (Zeiner *et al.* 1990A), it is possible that individuals breeding in the Project area were never observed despite extensive surveys.

The Project area provides both foraging and nesting habitat for the species. Agriculture, bulrush–cattail wetland, California annual grassland, cismontane alkali marsh, coastal and valley freshwater marsh, herbaceous wetland, valley oak/grass, and purple needlegrass are both suitable nesting and foraging habitats for the northern harrier. There is a total of 4,585 acres of suitable nesting and foraging habitat within the Project area. Additional suitable foraging habitat in the Project area for the northern harrier includes alluvial scrub, big sagebrush scrub, coastal scrub alliances and associations, and river wash. There is a total of 5,737 acres of additional suitable foraging habitat within the Project area. The combined suitable nesting and foraging habitat in the Project area totals 10,322 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 236 acres of suitable nesting and/or foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.3% of these habitats

on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). Of these impacts, 153 acres are nesting and foraging habitat (*i.e.*, habitat suitable for both nesting and foraging, including agriculture, bulrush–cattail wetland, California annual grassland, cismontane alkali marsh, coastal and valley freshwater marsh, herbaceous wetland, valley oak/grass, and purple needlegrass), representing 3.3% of this habitat on site. The remaining 82 acres of impact are foraging habitat only (*i.e.*, habitat suitable only for foraging, including alluvial scrub, big sagebrush scrub, coastal scrub alliances and associations, and river wash), representing 1.4% of this habitat on site. A total of 130 acres of suitable nesting and/or foraging habitat would be temporarily impacted, of which 82 acres are nesting and foraging habitat and 49 acres are foraging habitat only.

The northern harrier is still relatively widespread and common throughout its range, and uses a variety of habitats for foraging. The construction of RMDP facilities would be phased over a long period of time and thousand of acres of foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek would be available for this species at any given time. At the completion of temporary disturbances, these areas would be restored. Furthermore, although the northern harrier potentially nests on site, it has not been observed to nest and no known nesting areas would be affected. Therefore, the overall loss of 2.3% of nesting and/or foraging habitat as a result of construction/grading activities, including 3.3% of foraging and nesting habitat and 1.4% foraging habitat only, would not be a substantial adverse effect on the habitat of a special-status species; would not impede the use of a native wildlife nursery site; would not have the potential to substantially reduce the habitat of the species on site or rangewide; would not potentially cause the species to drop below self-sustaining levels on site or rangewide; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,799 acres of suitable nesting and/or foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 36.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). Of these impacts, 2,213 acres are nesting and foraging habitat, representing 48.3% of this habitat on site. The remaining 1,585 acres of impact are foraging habitat only, representing 27.6% of this habitat on site.

The northern harrier is still relatively widespread and common throughout its range. However, the overall loss of 36.8% of nesting and/or foraging habitat, including 48.3% of foraging and nesting habitat and 27.6% foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 4,034 acres (39.1%). Of these impacts, 2,366 acres are nesting and foraging habitat, representing 51.6% of this habitat on site. The remaining 1,668 acres of impact are foraging habitat only, representing 29.1% of this habitat on site.

The combined loss of 39.1% of nesting and/or foraging habitat, including 51.6% of foraging and nesting habitat and 29.1% foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Although the northern harrier has never been documented nesting on site, the species is known to be a local breeder in the Project region and it is possible that pairs of northern harriers could nest in the Project area. Because northern harriers are highly mobile, implementation of the RMDP would not result in injury or mortality of adult individuals occupying this habitat during construction and/or grading activities. However, the proposed Project could result in destruction of young or eggs of this species as a result of

destruction of nests from any construction and/or grading activities occurring during the nesting season. In addition, disturbances in close proximity to nest sites could result in abandonment of nests, increasing the risk of predation (*e.g.*, by crows and ravens that are attracted to construction areas) and general exposure. Implementation of the SCP would not directly impact this species.

Injury or mortality of individual birds, specifically the loss of young and/or eggs as a result of nest destruction or nest abandonment during construction/grading activities, would have a substantial direct adverse effect on this species; would impede the use of a native wildlife nursery site; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

As described above for direct permanent and temporary impacts, adult northern harriers are highly mobile and are unlikely to be directly affected by build-out of the Specific Plan, VCC, and Entrada planning areas. However, nesting habitat for this species would be lost; thus, construction and/or grading activities occurring during the nesting season could inadvertently destroy active nests, resulting in impacts to eggs and/or young. Construction disturbances could also cause nest abandonment.

Injury or mortality of individual birds, specifically loss of young and/or eggs during construction/grading activities as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short-term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect northern harriers in areas adjacent to construction zones. Secondary impacts could include exposure to construction-related dust, noise, ground vibration, nighttime lighting, increased human activity, increased predation (*e.g.*, by crows and ravens attracted to construction sites), and impaired water quality (*e.g.*, turbidity and other pollutants) resulting from construction

within or in proximity to wetland habitats used for nesting and foraging. The northern harrier has been documented avoiding or leaving suitable habitat near areas of active use by humans and in response to direct human interference (Serrentino 1992; Bildstein 1987; Macwhirter and Bildstein 1996). Construction occurring near active nest sites therefore could result in direct impacts to young or generally reduce reproductive success due to reduced foraging efficiency and caretaking of young.

Long-term secondary impacts from the close proximity of urban development to suitable nesting and/or foraging habitat could include disturbance-caused nest abandonment and disruptions associated with increased human activity, noise, nighttime lighting, and vehicle collisions. As noted above, human activity near nest sites can cause nest abandonment. Lighting could increase the northern harrier's vulnerability to nest predation by pet, stray, and feral cats and dogs, and other mesopredators. Use of pesticides could result in loss of prey and secondary poisoning. Wetland nesting habitats also would be vulnerable to degradation of water quality, including sedimentation and other pollutants of concern such as petroleum products, chemicals, and heavy metals.

Both these short-term and long-term secondary impacts would have a substantial adverse effect on this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and/or foraging habitat for the northern harrier (Figures **4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 209 acres (2.0%) permanent loss and 169 acres of temporary loss of nesting and/or foraging habitat, including
    - 135 acres (2.9%) of permanent loss and 112 acres of temporary loss of nesting and foraging habitat

  - 74 acres (1.3%) of permanent loss and 57 acres of temporary loss of foraging habitat only;
- Alternative 4 – 199 acres (1.9%) permanent loss and 171 acres of temporary loss of nesting and/or foraging habitat, including
  - 124 acres (2.7%) of permanent loss and 122 acres of temporary loss of nesting and foraging habitat
  - 75 acres (1.3%) of permanent loss and 48 acres of temporary loss of foraging habitat only;
- Alternative 5 – 238 acres (2.3%) permanent loss and 166 acres of temporary loss of nesting and/or foraging habitat, including
  - 160 acres (3.5%) of permanent loss and 105 acres of temporary loss of nesting and foraging habitat
  - 78 acres (1.4%) of permanent loss and 61 acres of temporary loss of foraging habitat only;
- Alternative 6 – 222 acres (2.2%) permanent loss and 170 acres of temporary loss of nesting and/or foraging habitat, including
  - 158 acres (3.4%) of permanent loss and 111 acres of temporary loss of nesting and foraging habitat
  - 64 acres (1.1%) of permanent loss and 59 acres of temporary loss of foraging habitat only; and
- Alternative 7 – 100 acres (1.0%) permanent loss and 422 acres of temporary loss of nesting and/or foraging habitat, including
  - 68 acres (1.5%) of permanent loss and 348 acres of temporary loss of nesting and foraging habitat
  - 32 acres (0.6%) of permanent loss and 74 acres of temporary loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 236 acres (2.3%) of permanent loss and 130 acres of temporary impacts, Alternatives 5 and 6 would have not substantially different permanent impacts, Alternatives 3 and 4 would have somewhat reduced impacts, and Alternative 7 would have substantially reduced impacts. For temporary impacts to nesting and/or foraging habitat, Alternatives 3 through 6 would have somewhat higher impacts and Alternative 7 would have substantially higher impacts compared to Alternative 2.

Compared to Alternative 2 for nesting and foraging habitat, which would result in 153 acres (3.3%) of permanent loss and 82 acres of temporary impacts, Alternatives 5 and 6 would have not substantially to marginally different permanent impacts, Alternatives 3 and 4 would have somewhat reduced impacts, and Alternative 7 would have substantially reduced impacts. For temporary impacts to nesting and foraging habitat, Alternatives 3 through 6 would have somewhat higher impacts and Alternative 7 would have substantially higher impacts compared to Alternative 2.

Compared to Alternative 2 for foraging habitat only, which would result in 82 acres (1.4%) of permanent loss and 49 acres of temporary impacts, Alternatives 3 through 5 would have not substantially different permanent impacts and Alternatives 6 and 7 would have somewhat reduced impacts. For temporary impacts to foraging habitat only, Alternatives 3 through 6 would have not substantially to marginally different impacts and Alternative 7 would have somewhat higher impacts compared to Alternative 2.

The relatively greater difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

The overall permanent loss of nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be less than or similar in magnitude compared to Alternative 2. This impact would not be a substantial adverse effect on the habitat of a special-status species; would not impede the use of a native wildlife nursery site; would not have the potential to substantially reduce the habitat of the species on site or rangewide; would not cause the species to drop below self-sustaining levels on site or rangewide; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species. The direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the northern harrier (Figures **4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 3,586 acres (34.7%) permanent loss of nesting and/or foraging habitat, including

  - 2,098 acres (45.7%) of permanent loss of nesting and foraging habitat
  - 1,488 acres (25.9%) of permanent loss of foraging habitat only;
- Alternative 4 – 3,454 acres (33.5%) permanent loss of nesting and/or foraging habitat, including
  - 2,022 acres (44.1%) of permanent loss of nesting and foraging habitat
  - 1,432 acres (25.0%) of permanent loss of foraging habitat only;
- Alternative 5 – 3,367 acres (32.6%) permanent loss of nesting and/or foraging habitat, including
  - 1,985 acres (43.3%) of permanent loss of nesting and foraging habitat
  - 1,381 acres (24.1%) of permanent loss of foraging habitat only;
- Alternative 6 – 2,984 acres (28.9%) permanent loss of nesting and/or foraging habitat, including
  - 1,855 acres (40.5%) of permanent loss of nesting and foraging habitat
  - 1,129 acres (19.7%) of permanent loss of foraging habitat only; and
- Alternative 7 – 2,550 acres (24.7%) permanent loss of nesting and/or foraging habitat, including
  - 1,515 acres (33.0%) of permanent loss of nesting and foraging habitat
  - 1,035 acres (18.0%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 3,799 acres (36.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 2,213 acres (48.3%) of permanent loss of nesting and foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 1,568 acres (27.3%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in substantial impacts to nesting and/or foraging habitat, ranging from 24.7% for Alternative 7 to 34.7% for Alternative 3. These impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use

of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the northern harrier:

- Alternative 3 – 3,794 acres (36.8%) permanent loss of nesting and/or foraging habitat, including
  - 2,233 acres (48.7%) of permanent loss of nesting and foraging habitat
  - 1,562 acres (27.2%) of permanent loss of foraging habitat only;
- Alternative 4 – 3,653 acres (35.4%) permanent loss of nesting and/or foraging habitat, including
  - 2,146 acres (46.8%) of permanent loss of nesting and foraging habitat
  - 1,507 acres (26.3%) of permanent loss of foraging habitat only;
- Alternative 5 – 3,604 acres (34.9%) permanent loss of nesting and/or foraging habitat, including
  - 2,145 acres (46.8%) of permanent loss of nesting and foraging habitat
  - 1,459 acres (25.4%) of permanent loss of foraging habitat only;
- Alternative 6 – 3,206 acres (31.1%) permanent loss of nesting and/or foraging habitat, including
  - 2,013 acres (43.9%) of permanent loss of nesting and foraging habitat
  - 1,193 acres (20.8%) of permanent loss of foraging habitat only; and
- Alternative 7 – 2,650 acres (25.7%) permanent loss of nesting and/or foraging habitat, including
  - 1,583 acres (34.5%) of permanent loss of nesting and foraging habitat
  - 1,067 acres (18.6%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 4,034 acres (39.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 2,366 acres (51.6%) of permanent loss to nesting and foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for the combined direct and indirect permanent loss of foraging habitat only, which would result in 1,668 acres (29.1%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer combined direct and indirect impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in substantial impacts to nesting and/or foraging habitat, ranging from 25.7% for Alternative 7 to 36.8% for Alternative 3. These combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to northern harrier individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Although adults are unlikely to be directly affected, suitable nesting habitat is present on site and construction/grading activities could result in impacts to eggs or young where northern harriers are nesting as a result of direct destruction of nests or abandonment of nest sites. Impacts to northern harrier individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Short-term effects include construction-related dust, noise, ground vibration, nighttime lighting, impaired water quality, and disturbance from human activity that could cause nest abandonment. Urban development could result in long-term secondary impacts such as increased human activity; nighttime lighting; harassment by pet, stray, and feral cats and dogs; secondary poisoning and loss of prey from use of pesticides; vehicle collisions; and impaired water quality.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to northern harrier: (1) impacts to individuals; (2) loss of suitable nesting and/or foraging habitat; and (3) secondary impacts to individuals and suitable nesting and/or foraging habitat outside the Project footprint.

Although nesting by northern harriers has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, suitable nesting habitat is present on site and it is assumed for the purpose of this analysis that nesting could occur. Impacts to individuals could occur if active nests are disturbed during construction, including destruction of nests and loss of eggs and/or fledglings, or abandonment of nests as a result of human activity and construction activities. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of nesting and/or foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,650 acres (25.7%) under Alternative 7 to 4,034 acres (39.1%) under Alternative 2. This would be a substantial loss of suitable foraging and/or nesting habitat. Although the northern harrier has not been documented to nest in the Project disturbance area, if it were to nest on site, both the loss of nesting and foraging habitat would substantially alter its distribution on site. As mitigation for this loss of habitat, the combined Newhall Ranch Specific

Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the northern harrier in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 4,682 acres of suitable nesting and/or foraging habitat for the northern harrier in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, any foraging and/or nesting activities by the northern harrier could be adversely affected in the short-term by increased human activity, dust, noise, ground vibration, increased predation (*e.g.*, by crows and ravens), and water quality impacts. Nighttime lighting also may cause adults to abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all grading and construction activities. Nighttime lighting will be downcast away from natural habitat areas. Water quality will be protected through several general measures, including obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants.

Long-term development-related impacts include increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of foraging individuals and nest sites; pet, stray, and feral cats and dogs; vehicle collisions; and impaired water quality that may affect nesting habitat. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of nesting and/or foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide northern harriers with relatively undisturbed habitat for foraging and potentially nesting. Long-term hydrology and water quality will be protected through several general measures, including obtaining pertinent state and federal wetland permits and authorizations. Lighting restrictions along the perimeter of natural areas would help avoid impacts to potential nest sites. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect northern harriers during foraging activities and at potential nest sites. Controls on pesticides (including rodenticides) will prevent accidental poisoning and potential loss of prey.

The specific mitigation measures for the northern harrier are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-67 IMPACTS TO INDIVIDUALS – NORTHERN HARRIER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of northern harrier individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to northern harrier individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to northern harrier individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-68 LOSS OF HABITAT – NORTHERN HARRIER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for northern harrier through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 524 acres of suitable nesting and/or foraging habitat for northern harrier**.** The High Country SMA will preserve and enhance 3,005 acres of suitable nesting and/or foraging habitat for northern harrier.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for northern harrier through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation

ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the northern harrier would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-69 SECONDARY IMPACTS – NORTHERN HARRIER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for short-term construction-related impacts to northern harrier, such as impaired water quality and lighting, and long-term secondary effects associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as increased human activity, lighting, and impaired

water quality. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for the effects of increased human activity and the increase in incidence of vehicle collisions.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect potential nesting habitat for the northern harrier.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to northern harrier, including short-term construction-related, dust, noise, ground vibration,

increased human activity, and impaired water quality, as well as long-term secondary effects, such as increased human activity; harassment by pet, stray, and feral cats and dogs; vehicle collisions; and secondary poisoning and loss of prey due to the use of pesticides.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest sites and providing for buffers between nests and construction activities.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will mitigate for increased human activity and increased incidence of vehicle collisions in the Project area through habitat protection, restoration and enhancement, and management.

BIO-47 requires that slow moving water habitats shall be constructed up stream and down stream of any river crossing or bridge construction area that will provide refuge for northern harrier during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 is a more generally applicable mitigation measure that specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides (including rodenticides and insecticides) and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to northern harrier would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SHORT-EARED OWL (NESTING) (USBC, CSC)

Life History

The short-eared owl (*Asio flammeus*) is a ground-dwelling owl that lives on every continent except Australia (Terres 1980). In North America, its range extends from northern Alaska east to Newfoundland and south to central California. The species may winter in some of its United States breeding range, but individuals from Canada and other colder areas migrate to areas further south of their nesting range when snow affects access to rodent prey (Terres 1980). The wintering range of the species includes all of the United States and most of Mexico (Wiggins *et al.* 2006). The short-eared owl feeds primarily on voles and other small mammals, such as shrews, moles, rabbits, and pocket gophers (Bent 1938; Earhart and Johnson 1970; Wiggins *et al.* 2006). Individuals tend to congregate in areas where vole or other small mammal populations are high. The distribution and abundance of short-eared owls therefore may fluctuate in relation to rodent populations, and nomadic individuals may shift wintering and breeding sites based on spatial and temporal variation in prey abundance.

Short-eared owls are found throughout California as an uncommon but widespread winter migrant, although they may be year-round residents and breeders in northern California. Migrants usually arrive in California in September or October and leave in April (Zeiner *et al.* 1990A). The species has been known to winter in the Central Valley, in the western Sierra Nevada foothills, in the southern desert region, and in the Channel Islands (Zeiner *et al.* 1990A; Dixon and Bond 1937). With only one recent breeding record within the desert regions, the species is considered primarily a non-breeder in southern California (Garrett and Dunn 1981; Terres 1980).

The short-eared owl usually occurs in open mixed and tall grass habitats with few trees, such as annual and perennial grasslands, prairies, tundra, dunes, meadows, agricultural lands, and saline and fresh emergent wetlands (Zeiner *et al.* 1990A; Terres 1980). It commonly uses fence posts and small mounds as perches in open treeless areas (Zeiner *et al.* 1990A). Short-eared owls typically nest on the ground, though they may roost in individual trees or groves near agriculture fields in the winter (Wiggins *et al.* 2006; Terres 1980).

Short-eared owls breed from early March through July (Bent 1938). Eggs are laid in April and May, and clutch size is four to 14 eggs (but usually five to seven), with higher numbers in years with higher prey population (Murray 1976). The female incubates the eggs for 28 to 30 days (Pitelka *et al.* 1955A) and cares for the young while the male brings food to the female (Zeiner *et al.* 1990A). The male also defends the nest with distraction displays and vocalizations (Wiggins *et al.* 2006). Young birds fledge between 24 and 36 days of age (Wiggins *et al.* 2006; Urner 1923).

The relatively large tracts of open habitat required by short-eared owls are increasingly being converted to agricultural, grazing, recreational, and development uses. Numbers of short-eared owl have declined over most of their North American range in recent decades due to the destruction and fragmentation of grassland and wetland habitats (Remsen 1978). Short-eared owls are vulnerable to mesopredators that are associated with urban, rural, and agricultural areas, such as red fox and striped skunk, and domestic dogs. They are also likely vulnerable to pesticides, particularly rodenticides, which may reduce their prey or cause secondary poisoning, and like many other raptors, may be vulnerable to vehicle collisions. This species also often hunts around dusk and dawn and may be affected by artificial lighting, which may affect the behavior of its prey and make it more vulnerable to predators.

Survey Results

Surveys for upland bird species were conducted throughout the Project area and in nearby areas between 1995 and 2008 by a variety of consulting firms and covered the Landmark Village, Mission Village, and Homestead East and West areas as well as Potrero, Long, and Chiquito canyons and the upland habitats along the Santa Clara River (Bloom Biological 2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Upland surveys have also been conducted in the VCC (Dudek and Associates 2006D; Guthrie 2004B) and Entrada (Dudek and Associates 2006E; Guthrie 2004G) planning areas. Areas near the Project site that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project site on the south and east (Guthrie 2004C), the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I), the Riverpark site (now referred to as "River Village") upstream of the Specific Plan area (Compliance Biology 2003A), and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

Short-eared owls have never been observed in the defined Project area. Most of these surveys, however, were conducted in the spring and summer for nesting species and would not have reliably observed migrant or wintering individuals. An individual was observed just outside the Project area boundary in the Salt Creek area just west of the Ventura/Los Angeles County line in the fall of 2005 (Dudek and Associates 2006B). In December 2006, a freshly dead individual was found at the edge of a cultivated field just west of I-5 (off site) during the Santa Clarita bird count (Olson 2007). Based on these two observations, it is assumed for the purpose of this analysis that the short-eared owl at least occurs in the Project area as an occasional migrant and uses the site for foraging.

Suitable foraging habitat for the short-eared owl in the Project area includes agriculture, bulrush–cattail and herbaceous wetland, California annual grassland, purple needlegrass, and valley oak/grass. A total of 4,564 acres of suitable foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 142 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.1% of suitable habitat on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 82 acres would be temporarily impacted.

The short-eared owl is still a wide-ranging species and likely only occurs on site as an occasional migrant. Because it uses a variety of habitats for foraging, the construction of RMDP facilities would be phased over a long period of time, and approximately 1,500 acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species, the loss of foraging habitat used during migration and temporary impacts that would occur as a result of construction and/or grading activities would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,212 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 48.5% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat).

Because the short-eared owl is still a wide-ranging species, likely only occurs on site as an occasional migrant, uses a variety of habitat for foraging, and approximately 1,500 acres of foraging habitat would be preserved in the River Corridor SMA, High Country SMA, and Salt Creek area, this permanent loss of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,353 acres (51.6%).

Because the short-eared owl is still a wide-ranging species, likely only occurs on site as an occasional migrant, uses a variety of habitat for foraging, and approximately 1,500 acres of foraging habitat would be preserved in the River Corridor SMA, High Country SMA, and Salt Creek area, this combined loss of habitat would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Short-eared owls are highly mobile; therefore, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds migrating through the Project area. However, foraging behavior of migrants may be somewhat disrupted because of human activity, noise, and other factors discussed under secondary effects below. Vegetation clearing and grading would not result in destruction of young or eggs of this species because, as a migrant, this species is not expected to nest on site. Implementation of the SCP also would not directly impact this species. Because the Project area supports a large amount of suitable foraging habitat that would not be disturbed, construction and grading activities related to implementation of the RMDP would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent and temporary impacts. Injury or mortality of migrating individuals is expected to be a rare occurrence (*e.g.,* from vehicle collisions or predation), and this species is not expected to nest on site. Therefore, build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would be short term. These potential construction-related secondary effects, such as fugitive dust, ground vibration, noise, nighttime illumination, and increased human activity, would affect a small proportion of short-eared owls migrating through the Project area. Most of these factors would cause short-eared owls to avoid construction areas

during foraging, but lighting could increase their risk of predation or affect the behavior of their prey.

Similarly, potential long-term development-related secondary effects resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, such as nighttime illumination; noise, increased human activity, predation by pet, stray, and feral cats and dogs and other mesopredators, and vehicle collisions may disrupt foraging behavior and increase injury and mortality rates over existing conditions. Also, pesticides (particularly rodenticides) could reduce prey or cause secondary poisoning. However, because very few individuals apparently use the Project area, these impacts would rarely occur. Furthermore, there would be adequate foraging habitat for migrant individuals well away from development edges; a total of 1,521 acres of suitable foraging habitat would be protected in the River Corridor SMA, High Country SMA, and Salt Creek areas.

These potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site or rangewide; interfere with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the short-eared owl (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 127 acres (2.8%) of permanent loss and 111 acres of temporary loss;
- Alternative 4 – 117 acres (2.6%) of permanent loss and 122 acres of temporary loss;
- Alternative 5 – 152 acres (3.3%) of permanent loss and 103 acres of temporary loss;

- Alternative 6 – 150 acres (3.3%) of permanent loss and 110 acres of temporary loss; and
- Alternative 7 – 68 acres (1.5%) of permanent loss and 347 acres of temporary loss.

Compared to Alternative 2, which would result in 142 acres (3.1%) of permanent habitat loss and 82 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat reduced, would be marginally increased under Alternatives 5 and 6, and would be substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat increased and would be substantially increased under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in substantially fewer permanent impacts and substantially greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts associated with Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the short-eared owl (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,098 acres (46.0%) of permanent loss;
- Alternative 4 – 2,021 acres (44.3%) of permanent loss;
- Alternative 5 – 1,985 acres (43.5%) of permanent loss;
- Alternative 6 – 1,855 acres (40.6%) of permanent loss; and
- Alternative 7 – 1,515 acres (33.2%) of permanent loss.

Compared to Alternative 2, which would result in 2,212 acres (48.5%) of permanent loss of habitat, Alternatives 3 through 7 would have successively reduced impacts. Alternative 7 would have substantially reduced impacts due to the much reduced development of agricultural land in Landmark Village and Homestead East (Onion Fields) adjacent to the Santa Clara River. Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under

Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the short-eared owl:

- Alternative 3 – 2,225 acres (48.8%) of permanent loss;
- Alternative 4 – 2,138 acres (46.8%) of permanent loss;
- Alternative 5 – 2,137 acres (46.8%) of permanent loss;
- Alternative 6 – 2,005 acres (43.9%) of permanent loss; and
- Alternative 7 – 1,583 acres (34.7%) of permanent loss.

Compared to Alternative 2, which would result in 2,353 acres (51.6%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have successively reduced impacts. Alternative 7 would have substantially reduced impacts due to the much reduced development of agricultural land in Landmark Village and Homestead East (Onion Fields) adjacent to the Santa Clara River. Because the combined direct and indirect permanent loss of suitable habitat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to short-eared owl individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Injury or mortality of migrating individuals is expected to be a rare occurrence (*e.g.,* from vehicle collisions or predation) and this species is not expected to nest on site. Individuals may be displaced from foraging habitat within and in proximity to construction and development areas. However, because substantial foraging habitat would still be available, construction and/or grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate

the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Impacts to short-eared owl individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination, resulting in displacement from foraging habitat and increased risk of predation. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than during implementation of the RMDP and the SCP because of the much larger area of impact associated with build-out of the Specific Plan, VCC, and Entrada planning areas.

Potential long-term secondary impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity, increased predation, increased risk of vehicle collisions, and reduction of prey or potential secondary poisoning from use of pesticides, as described above for Alternative 2.

Because the short-eared owl is a migrant, very few individuals likely would be affected, and there would be adequate suitable habitat well away from development edges, these potential short-term and long-term secondary effects would not have a substantial adverse effect on the species or contribute to the reduction of its range and distribution. These secondary impacts would be adverse but not significant.

Mitigation Strategy and Summary

No mitigation is required for impacts to the short-eared owl because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system containing approximately 1,488 acres of foraging habitat for this species. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include

biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity, pet, stray, and feral cats and dogs; dust, lighting, and pesticides will also be mitigated through a variety of measures.

WESTERN BURROWING OWL (BURROW SITES AND SOME WINTERING SITES) (BCC, CSC)

Life History

The burrowing owl (*Athene cunicularia*) breeds from southern interior British Columbia, southern Alberta, southern Saskatchewan, and southern Manitoba, south through eastern Washington, central Oregon, and California to Baja California, east to western Minnesota, northwestern Iowa, eastern Nebraska, central Kansas, Oklahoma, eastern Texas, and Louisiana, the southern portion of Florida, and south to central Mexico. The species is also locally distributed throughout suitable habitat in Central and South America to Tierra del Fuego, and in Cuba, Hispaniola, the northern Lesser Antilles, Bahama Islands, and in the Pacific Ocean off the west coast of Mexico (County of Riverside 2008). The western subspecies, western burrowing owl (*A. c. hypugaea*), occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama (County of Riverside 2008). The winter range of the western burrowing owl is much the same as the breeding range, except that most individuals apparently vacate the northern areas of the Great Plains and the Great Basin (County of Riverside 2008). The majority of western burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north during March and April, and into the first week of May. These individuals winter within the breeding habitat of more southern-located populations. Thus, winter observations may include both the migrant individuals as well as the resident population (County of Riverside 2008). Western burrowing owls occurring in Florida are predominantly non-migratory, as are populations in southern California (Thomsen 1971). Western burrowing owls in northern California are believed to migrate (Coulombe 1971). In many parts of the United States, the western burrowing owl's breeding range has been reduced and it has been extirpated from certain areas, including western Minnesota, eastern North Dakota, Nebraska, and Oklahoma (Bates 2006).

In California, western burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates 2006). They typically inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation and also may occur in areas that include trees and shrubs if the cover is less than 30% (Bates 2006); however, they prefer treeless grasslands. Although western burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been observed in fallow agriculture fields, golf courses, cemeteries, road allowances, airports, vacant lots in residential areas and university campuses, and fairgrounds when nest burrows are present (Bates 2006; County of Riverside 2008). The availability of numerous small mammal burrows, such as those of California ground squirrel (*Spermophilus beecheyi*), is a major factor in determining whether an area with apparently suitable habitat supports western burrowing owls (Coulombe 1971). Western burrowing owls rarely use areas without colonies of burrowing mammals (Zarn 1974). They can excavate holes where burrowing mammals are absent but rarely do so (Thomsen 1971). County of Riverside

(2008) suggest that western burrowing owls exhibit high site-fidelity and reuse burrows year after year.

Western burrowing owls are opportunistic feeders, primarily feeding on arthropods, small mammals, and birds, and often need short grass, mowed pastures, or overgrazed pastures for foraging (County of Riverside 2008). Western burrowing owls are primarily crepuscular in their foraging habits but hunting has been observed throughout the day (Thomsen 1971; Marti 1974). Insects are often taken during daylight, whereas small mammals are taken more often after dark (County of Riverside 2008).

Western burrowing owls breed from March through August, with a peak in April and May. Migrants arrive on the breeding areas either singly or paired. Non-migrants retain their pair bonds throughout the year (County of Riverside 2008). Clutch size is six to 11 eggs, with an average of seven to nine eggs. Young emerge from burrows at about two weeks, and fly after about four weeks (Zarn 1974). Martin (1973) reported 95% of young fledging, with a mean reproductive success of 4.9 young per pair.

Factors related to declines in western burrowing owl populations include the loss of natural habitat due to urban development and agriculture; other habitat destruction; predators, including domestic dogs; collisions with vehicles; and pesticides/poisoning of ground squirrels (Grinnell and Miller 1944; Zarn 1974; Remsen 1978). A ranking of the most important threats to the species included loss of habitat, reduced burrow availability due to rodent control, and pesticides (James and Espie 1997). Adjacency to development also is a threat to the western burrowing owl due to damaged burrows caused by dogs and humans. Collision with vehicles is a frequent cause of mortality because of the owl's behavior of sitting and hunting on roads at night. Use of pesticides may have direct toxic effects; for example, when carbofuran, a carbamate insecticide, is sprayed over nest burrows (County of Riverside 2008). Secondary poisoning due to contaminated prey may also be a factor. On pastures where strychnine-coated grain is used to control ground squirrels, owl weights were significantly lower than on control pastures, suggesting a sublethal effect or less available food (County of Riverside 2008).

Survey Results

Numerous bird surveys have been conducted between 1996 and 2008 in the Project area in areas with suitable burrowing owl habitat (agriculture and grasslands), but no CDFG burrowing owl protocol surveys have been conducted in the Project area. General bird surveys have been conducted in Landmark Village; Mission Village; and Homestead East and West areas; Potrero, Long, and Chiquito canyons; and the upland habitats along the Santa Clara River (Bloom Biological2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Upland surveys have also been conducted in the VCC (Dudek and

Associates 2006D; Guthrie 2004B) and Entrada planning areas (Dudek and Associates 2006E; Guthrie 2004G). Areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project area on the south and east (Guthrie 2004C); the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I); the Riverpark site (now referred to as River Village) upstream of the Specific Plan area (Compliance Biology 2003A); and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

The western burrowing owl was not observed during these surveys. The surveys frequently passed through uplands and open grassland areas and documented all observed special-status species. While these surveys were not focused on western burrowing owl, this species is highly detectable and would have been detected if present. Furthermore, surveys conducted by Bloom Biological, Inc. in 2007 and 2008 emphasized agriculture fields and abandoned fields in the Project area during dawn and dusk when the western burrowing owl is most active (2007A, 2008).

Surveys have also been conducted within the River Corridor SMA for riparian birds from 1988 to 2006, including within Castaic Creek and the Santa Clara River from the I-5 bridge to the Las Brisas Bridge, west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C; Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A). These surveys included the riparian vegetation in the River corridor and also adjacent upland habitat and likely would have resulted in the detection of western burrowing owl if present within these areas. However, the western burrowing owl was not observed during these surveys.

The western burrowing owl has been incidentally observed at two locations (**Figure 4.5-6,** RMDP/SCP– Special-Status Wildlife Species Occurrences). A single western burrowing owl individual was observed twice at the same location within a four-week period (November and December 2006) in the northern portion of Middle Canyon, east of Airport Mesa, in ruderal habitat (Babcock 2007). Another individual was observed in December 2006 in Middle Canyon, and again on April 11, 2007 (Miller 2007). It was observed on the upslope portion of a hill with relatively bare coverage, adjacent to the road near coastal scrub, utilizing a small mammal burrow, which it appeared to have only recently occupied. Given the timing of the sightings (winter of 2006 and spring of 2007) and the fact that there have been no other observations of the western burrowing owl during the numerous spring and summer surveys, the observed individuals likely were wintering on site or temporarily using the site during migration.

The available information indicates that the western burrowing owl occasionally uses the site for wintering or during migration, but is unlikely to nest on site. However, the Project area is within

its breeding range and thus it is considered to have potential to breed on site, and is analyzed in that context. The Project area supports suitable habitat for the western burrowing owl, including California annual grassland, purple needlegrass, disturbed land, and agriculture (where the agriculture is not continuously or frequently tilled). A total of 5,118 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 212 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 4.1% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 94 acres would be temporarily impacted.

The observation of two western burrowing owls between 1988 and 2007 indicates that the Project area is occasionally used for wintering or during migration. Due to the lack of CDFG protocol burrowing owl surveys in the Project area, the likelihood of this species using dens for nesting or wintering on site is unknown. If burrowing owl were to use dens on site for nesting or over-wintering, the loss of the dens as the result of construction activities would have a substantial adverse effect; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,079 acres of suitable habitat would be permanently loss through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 60.2% of suitable habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat).

Because the western burrowing owl is known to use the Project area for wintering or during migration, and has at least some potential to nest on site, the loss of 60.2% of suitable habitat would substantially reduce the available habitat on site for this species. Therefore, this loss of habitat would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,291 acres (64.3%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the western burrowing owl in the Project area and substantially restrict its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because the western burrowing owl is highly mobile, it is unlikely that implementation of the RMDP would result in mortality of adult birds of this species. However, foraging adult birds would be expected to leave construction areas and nearby areas, thus affecting their distribution on site. Also, because there is some potential for the western burrowing owl to nest on site, implementation of the RMDP could result in destruction of natal dens, young, or eggs if construction/grading activities occurred during the nesting season. Implementation of the SCP would not directly impact this species.

Because of the special status of this bird species and the potential for impacts to individual birds, specifically loss of, young, and/or eggs as a result of nest destruction or

nest abandonment during construction/grading activities, the implementation of the RMDP could have a substantial direct adverse effect on this species; impede the use of a native wildlife nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The western burrowing owl is a mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. However, foraging adult birds would be expected to leave construction areas and nearby areas, thus affecting their distribution on site. Also, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species. Impacts to eggs or young would be a substantial adverse effect on a special-status species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, increased human activity, and nighttime illumination. Because this species uses ground burrows for nesting and during wintering and migration, they are more susceptible to harassment by humans and disturbances from ground vibration, noise, and dust. Because this species often forages around dusk and dawn, nighttime lighting could increase its risk of predation and affect the behavior of its prey. Although construction would be short term in nature, these construction-related disturbances therefore could result in impacts to individuals, abandonment of winter and breeding burrows, or a decrease in nesting success of western burrowing owl.

Potential long-term secondary impacts from the build-out of the Specific Plan, VCC, and Entrada planning areas include abandonment of winter and nesting burrow sites due to nighttime lighting; noise disturbance; harassment by humans; increased harassment and predation by pet, stray, and feral cats and dogs; as well as other mesopredators. The use of pesticides within and adjacent to open foraging areas could result in direct and secondary poisoning to the western burrowing owls, a reduction in prey, and a loss of potential burrow sites created by ground squirrels. In addition, the increase in traffic associated with urban development may result in an increased incidence of vehicle collisions.

Short-term and long-term secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for western burrowing owl (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 197 acres (3.8%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 179 acres (3.5%) of permanent loss and 142 acres of temporary loss;
- Alternative 5 – 234 acres (4.6%) of permanent loss and 118 acres of temporary loss;
- Alternative 6 – 238 acres (4.6%) of permanent loss and 132 acres of temporary loss; and
- Alternative 7 – 112 acres (2.2%) of permanent loss and 438 acres of temporary loss.

Compared to Alternative 2, which would result in 212 acres (4.1%) of permanent habitat loss and 94 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat less, somewhat more under Alternatives 5 and 6, and substantially less under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat more and would be substantially more under Alternative 7. The difference between Alternative 7 (substantially less permanent impacts and substantially more temporary impacts) is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Although the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude compared to Alternative 2, if the burrowing owl were to use dens for nesting or over-wintering, the permanent loss of these dens would be significant, absent mitigation, under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for western burrowing owl (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,955 acres (57.7%) of permanent loss;
- Alternative 4 – 2,821 acres (55.1%) of permanent loss;
- Alternative 5 – 2,767 acres (54.1%) of permanent loss;
- Alternative 6 – 2,548 acres (49.8%) of permanent loss; and
- Alternative 7 – 2,087 acres (40.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,079 acres (60.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 6 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries, as well as other changes in the Project footprint under Alternative 7 compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, but still substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for western burrowing owl:

- Alternative 3 – 3,152 acres (61.6%) of permanent loss;
- Alternative 4 – 3,000 acres (58.6%) of permanent loss;
- Alternative 5 – 3,001 acres (58.6%) of permanent loss;
- Alternative 6 – 2,785 acres (54.4%) of permanent loss; and
- Alternative 7 – 2,200 acres (43.0%) of permanent loss.

Compared to Alternative 2, which would result in 3,291 acres (64.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be generally successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 (Alternatives 4 and 5 would have nearly identical impacts), and there would be additional pullbacks from the Santa Clara River and its tributaries, as well as other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for western burrowing owl occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to western burrowing owl individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Migrating and wintering adults could be displaced from suitable foraging habitat and there is some potential for impacts to eggs and/or young as a result of destruction of nest burrows if breeding occurred on site. Impacts to individual western burrowing owls occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented

above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, increased human activity, and nighttime illumination. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include noise; nighttime illumination; pesticides; increased human activity; predation by pet, stray, and feral cats and dogs and mesopredators; and increased incidence of vehicle collisions, as described above for Alternative 2.

These potential short-term and long-term secondary effects would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation, for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western burrowing owl: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

There are a few incidental observations of western burrowing owls on site that were determined to be wintering or migrating individuals. Nesting by this species has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, for the purpose of this analysis, it is assumed that western burrowing owls could nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if western burrowing owls were to nest on site and active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid these impacts, focused surveys for western burrowing owls and assessment of their nesting status, if present, will be conducted 30 days prior to construction activities. Non-breeding individuals will be evacuated from the site using CDFG-approved burrow closure procedures and, in the case of breeding individuals, construction work within 500 feet of the nest will be delayed until fledglings have left the nest. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the western burrowing owl resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,200 acres (43.0%) under Alternative 7 to

3,291 acres (64.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for foraging, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the western burrowing owl in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 896 acres of suitable habitat for the western burrowing owl in the High Country SMA and the Salt Creek area (**Figure 4.5-3**), as well as 100 acres in the River Corridor SMA.

With regard to secondary effects, foraging, and potentially nesting, activities by the western burrowing owl could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests, if breeding were to occur, due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators, such as domestic dogs. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if burrowing owl dens, including active nests, are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; increased noise; lighting; pesticides, which may cause direct and secondary poisoning, loss of prey, and loss of ground squirrel burrow sites; human disturbances of nest sites; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and increased vehicle collisions. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 896 acres of suitable habitat in the High Country SMA and Salt Creek area and 100 acres in the River Corridor SMA will provide western burrowing owls with relatively undisturbed habitat for foraging and potentially nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect western burrowing owls by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning, loss of prey, and loss of burrow sites.

The specific mitigation measures for the western burrowing owl are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-70 IMPACTS TO INDIVIDUALS – WESTERN BURROWING OWL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of western burrowing owl individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two mitigation measures to reduce impacts to western burrowing owl individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-57 requires a survey for the presence of burrowing owls and nesting status of the individuals at the site 30 days prior to construction activities. Surveys shall be conducted in areas dominated by field crops, disturbed habitat, and grasslands; and along levee locations, or if such habitats occur within 500 feet of a construction zone. If the burrowing owl is detected but nesting is not occurring, construction work can proceed after any owls have been evacuated from the site using CDFG-approved burrow closure procedures and after alternative nest sites have been provided. If nesting is occurring, construction work within 500 feet shall be delayed until fledglings have left the nest. Surveys shall only be conducted in areas dominated by field crops and grassland, or if such habitats occur within 500 feet of a construction zone.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to western burrowing owl individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-71 LOSS OF HABITAT – WESTERN BURROWING OWL

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for western burrowing owl through habitat protection, restoration and enhancement, and management.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The High Country SMA will protect and manage at least 571 acres of suitable habitat for the western burrowing owl.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measure to mitigate for the loss of habitat for the western burrowing owl through habitat protection, restoration and enhancement, and management.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes 324 acres of suitable habitat for the western burrowing owl.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the western burrowing owl would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-72 SECONDARY IMPACTS – WESTERN BURROWING OWL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Measures Recommended by EIS/EIR

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the western burrowing owl associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such noise, increased human activity, and greater vulnerability to predators and disturbances of behavior and increased physiological stress as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for western burrowing owl that will offset secondary impacts by providing high-quality habitat away from development areas.

Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-36 through SP-4.6-42, as described above and which generally refer to habitat protection in the High Country SMA, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Previously Incorporated Measures

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to western burrowing owl, including short-term construction-related dust, noise, ground vibration, and increased human activity, as well as long-term habitat fragmentation; increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; direct and secondary poisoning and loss of prey and burrows from pesticide use; and increased incidence of vehicle collisions.

BIO-52 and BIO-57, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-19, as described above, will mitigate for habitat fragmentation effects and increased human activity in the Project area through habitat protection and management in the Salt Creek area.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning, loss of prey, and loss of burrows and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the western burrowing owl would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SUMMER TANAGER (NESTING) (CSC)

Life History

The summer tanager (*Piranga rubra*) is found in the eastern and southwestern United States, Central America, and South America, and regularly occurs north of Mexico. It primarily breeds in the eastern United States from New Jersey south to Florida, west to southern Illinois, and south to Texas. It also breeds in portions of New Mexico, Arizona, California, and Baja California. It winters in Central Mexico, south through Central America, and as far south as Bolivia and Brazil. Summer tanagers migrate from their breeding grounds to their wintering grounds in September and October (Robinson 1996).

The summer tanager was once a common summer resident and breeder in the desert riparian areas along the Colorado River Valley. It now occurs less commonly in the Colorado River Valley and can be found in isolated populations in southern California desert habitats. It may also nest near the City of Weldon on the south fork of the Kern River (Garrett and Dunn 1981). During migration, it can be found along the coast south of Los Angeles County as a rare but regular migrant (Zeiner *et al.* 1990A; Garrett and Dunn 1981).

Western populations of summer tanagers occupy riparian woodlands dominated by willows (*Salix* spp.) and cottonwoods (*Populus* spp.) at lower elevations (Robinson 1996; Rosenberg *et al.* 1982, 1991) and mesquite (*Prosopis* spp.) and tamarisk (*Tamarix* spp.) habitats at higher elevations (Robinson 1996). During the winter, the summer tanager occurs in open and second-growth habitats within its range, typically below 1,200 meters (3,937 feet) AMSL (Robinson 1996). In Mexico, it occurs in humid evergreen forest and tropical deciduous forest, especially along forest edges (Robinson 1996). Elsewhere, it is typically found along forest edges, within second-growth woodlands, and in shrubby clearings, as well as in parks and gardens in towns, and in woodland thinned for coffee plantations (Robinson 1996).

The summer tanager commonly feeds on bees and wasps, often foraging for larvae from hives and nests (Robinson 1996). It feeds on other insects, spiders, and small fruits and berries. It also captures flying insects during short sallies from a perch and gleans insects and fruits from leaf and bark surfaces of trees and shrubs (Robinson 1996).

The males begin to arrive to the breeding grounds in April, slightly before the females. Nests are constructed on a large, horizontal limb of a tree within riparian vegetation, usually a cottonwood or willow tree, approximately 3 to 6 meters (10 to 20 feet) above the ground (Zeiner *et al.* 1990A). The nest is constructed in an open-cup shape from dried herbaceous vegetation, and is usually placed among or under leaves (Robinson 1996).

There is little specific threat information for summer tanager. Robinson (1996) describes habitat destruction as the largest effect of human activities on the summer tanager. In the southwest,

particularly in southern California and the Colorado River valley, populations of summer tanagers have declined, due the elimination of riparian willow and cottonwood forest. Nest parasitism by brown-headed cowbirds may also be a factor contributing to declining populations. However, as discussed below, this species is not expected to nest on site and nest parasitism therefore would not be a potential impact of the proposed Project. Like other riparian bird species, however, several other potential human- or development-related factors may affect summer tanager. Construction related impacts include dust; noise and ground vibration; diminished water quality and altered hydrology; increased human activity in close proximity to foraging areas; and lighting, which may alter foraging behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include increased human activity; noise; lighting; diminished water quality and altered hydrology; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and pesticides, which may reduce insect prey or cause secondary poisoning.

Survey Results

Suitable nesting and foraging habitat for the summer tanager exists in riparian woodland habitat along the Santa Clara River and Castaic Creek in the Project area. However, no individuals have been observed within the Project area during annual riparian bird surveys conducted from 1988 to 2007 along the Santa Clara River (Bloom Biological 2007A; Guthrie 1988, 1989, 1990, 1991A, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2006A, 2006C; Labinger *et al.* 1995, 1997B; Labinger and Greaves 1999A). This species occurs only rarely in coastal southern California as a breeding bird. Bloom Biological, Inc (2007A) describes this species as not being known to breed within the Santa Clara River watershed, but reports that it may be found on the site occasionally in migration. Because the majority of the surveys in riparian areas were conducted during the spring and summer breeding season, migrating individuals may have been missed.

Southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub are suitable habitat for this species. It is assumed for the purpose of this analysis that the summer tanager may occur as a migrant but that it does not breed on site. A total of 445 acres of suitable habitat that could be used by summer tanagers during migration is present within the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 39 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

The summer tanager is a wide-ranging species that uses a variety of riparian-associated habitats. The construction of RMDP facilities would be phased over a long period of time, and hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for individuals of this species migrating through the Project area at any given time. Therefore, the permanent loss of 39 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 7.8 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 1.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the summer tanager is a wide-ranging species that may only occur on site as an occasional migrant and is not expected to nest in the Project area, the loss of 7.9 acres of habitat that would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the

movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 47 acres (10.4%). Because the summer tanager is a wide-ranging species that may only occur on site as an occasional migrant and is not expected to nest in the Project area, the loss of 47 acres of habitat from the combined direct and indirect permanent impacts of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The summer tanager is a mobile species that may occasionally occur on site as a migrant and is not expected to nest in the Project area. It is highly unlikely that construction activities associated with implementation of the RMDP would result in the injury or mortality of individual adult birds. Foraging and resting behavior, however, may be somewhat disrupted by construction activities because individuals would probably avoid or leave construction areas for other undisturbed habitat areas. The summer tanager is not expected to breed on site, so nests with eggs or young would not be affected. Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The summer tanager is a mobile species and it is highly unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. Foraging and resting behavior, however, may be somewhat disrupted by construction activities because individuals would probably avoid or leave construction

areas for other undisturbed habitat areas. The summer tanager is not expected to breed on site, so nests with eggs or young would not be affected. Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, increased human activity, nighttime illumination, and diminished water quality and altered hydrology. These effects may disturb summer tanagers that use the site for resting and foraging during migration, causing them to avoid or leave areas near construction, or reducing habitat quality and affecting prey abundance.

Potential long-term secondary impacts associated with urban development include traffic noise; nighttime illumination; invasion of suitable habitat by exotic species, such as giant reed and tamarisk; increased litter; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in migrating summer tanagers avoiding or leaving areas subject to these effects and there would be increased potential for predation of individuals.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed and resulting impacts to suitable habitat for the summer tanager, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained and would not be significantly affected.

Because the summer tanager is a wide-ranging species that may only occasionally use habitat in the Project area during migration, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the summer tanager (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitats):

- Alternative 3 – 25 acres (5.6%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 26 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 31 acres (7.0%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 17 acres (3.9%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.8%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 39 acres (8.7%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially reduced. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 and 6 would be marginally different, Alternatives 4 and 5 would be somewhat different, and Alternative 7 would be substantially reduced. The difference for direct permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to Alternative 2, and temporary impacts would be similar in magnitude to substantially reduced, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the summer tanager (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitats):

- Alternative 3 – 6.9 acres (1.6%) of permanent loss;
- Alternative 4 – 3.5 acres (0.8%) of permanent loss;

- Alternative 5 – 2.6 acres (0.6%) of permanent loss;
- Alternative 6 – 1.3 acres (0.3%) of permanent loss; and
- Alternative 7 – 0.7 acre (0.1%) of permanent loss.

Compared to Alternative 2, which would result in 7.8 acres (1.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts; Alternative 3 would have marginally reduced impacts and Alternatives 4 through 7 would have successively greater reductions compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the summer tanager:

- Alternative 3 – 32 acres (7.2%) of permanent loss;
- Alternative 4 – 29 acres (6.5%) of permanent loss;
- Alternative 5 – 34 acres (7.5%) of permanent loss;
- Alternative 6 – 19 acres (4.2%) of permanent loss; and
- Alternative 7 – 8.5 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (10.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for the summer tanager occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to summer tanager individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada

planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Adult birds would likely avoid impacts during construction activities by avoiding or leaving construction areas, resulting in potential impacts to foraging and resting. Because the species does not nest on site, nests with eggs and young would not be affected. Because the summer tanager is a wide-ranging species and may only occur on site as an occasional migrant, direct and indirect permanent impacts (Impacts to Individuals) would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust; noise and ground vibration; increased human activity; nighttime illumination; and diminished water quality and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include increased human activity; diminished water quality; traffic noise; nighttime illumination; exotic plant species; litter; pesticides; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2.

Because the summer tanager is a wide-ranging species and may only occasionally occur on site during migration, these potential short-term and long-term secondary effects would not have a substantial adverse effect on the species and would not contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the summer tanager because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 321 acres of suitable riparian habitat in the River Corridor SMA, as well as drainages in the Salt Creek area and High Country SMA that contain riparian habitats. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction, because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as

habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides, will also be mitigated through a variety of measures.

TRICOLORED BLACKBIRD (NESTING COLONY) (BCC, CSC)

Life History

The tricolored blackbird (*Agelaius tricolor*) is almost endemic to California. Approximately 99% of tricolored blackbirds occur in California, but their range includes small portions of Oregon and Washington, eastern Nevada, northern Baja California, and Mexico (County of Riverside 2008). Populations in California generally inhabit the same area all year round, and do not need additional wintering sites, but most populations have been restricted to the Central Valley and surrounding foothills and coastal and some inland localities in southern California. In California, the tricolored blackbird breeds locally west of the Cascade Range, Sierra Nevada, and southeastern deserts from Humboldt and Shasta counties south to extreme southwestern San Bernardino County, western Riverside County, and western and southern San Diego County. In central California, breeding colonies extend east into the foothills of the Sierra Nevada. It also breeds in the marshes of Klamath Basin in Siskiyou and Modoc counties and Honey Lake Basin in Lassen County (County of Riverside 2008).

The tricolored blackbird usually breeds in freshwater marshes with dense growths of emergent vegetation dominated by cattails (*Typha* spp.) or bulrushes (*Schoenoplectus* spp.), but breeding colonies also occur in willows (*Salix* spp.), blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* sp.). More recently, breeding habitat has included diverse upland and agricultural areas. Many colonies have been reported in Himalayan blackberries (*Rubus discolor*) and some of the largest colonies are in silage and grain fields in the San Joaquin Valley. Other nesting habitats include giant reed (*Arundo donax*), safflower (*Carthamus tinctorius*), mustard (*Brassica nigra*), stinging nettle (*Urtica dioica*), tamarisk (*Tamarix* spp.), riparian scrublands and forests (*e.g.*, willows and Fremont cottonwood (*Populus fremontii*), California ash (*Fraxinus latifolia*), and mulefat (*Baccharis salicifolia*)), a desert olive (*Forestiera neomexicana*) grove, wheat (*Triticum* spp.), barley (*Hordeum* spp.), and thistles. Dairies and feedlots are components of many tricolored blackbird breeding habitats. The tricolored blackbird usually forages in open habitats such as grassland, woodland, and croplands (County of Riverside 2008). Most foraging occurs within 3.1 miles of colony sites (County of Riverside 2008).

As colonial nesters, tricolored blackbirds generally construct their nests within 12 inches or less of one another. Colonies are "itinerant," changing nesting locations from year to year, and often nesting at more than one location during the breeding season; two broods per year may be raised (County of Riverside 2008). Although they often change nesting locations, they require secure nesting substrates, water, and suitable foraging habitats for breeding (County of Riverside 2008). Breeding occurs mid-April and extends into late July. Clutch size is typically three or four eggs, with clutches of two and five eggs occasionally observed (Emlen 1941). Incubation is about 11 days, and young are fledged at about 13 days (County of Riverside 2008).

The tricolored blackbird primarily feeds on seeds and invertebrates, and requires an abundant, concentrated supply of insects for successful breeding colonies. Observations of tricolored blackbirds indicate that they require some free water in addition to insects. Opportunistic foragers, tricolored blackbirds consume any locally abundant insect resource, including grasshoppers, grains (maturing and ripe seeds), snails, and small clams, often exploiting concentrated agricultural food resources (County of Riverside 2008).

The main threats to the tricolored blackbird are a result of human activity related to habitat loss and alteration; most of the Central Valley has been converted from suitable nesting and foraging habitat for the species to non-suitable conditions by agriculture and urbanization (County of Riverside 2008). Population studies have shown a decline in population of 37% between 1994 and 1997, with the number and size of colonies shrinking. Colonies with fewer than 1,000 adults had increased from 25% in the 1930s to almost 67% in the 1980s, and colonies with more than 10,000 adults had dropped from 12% to 3% (County of Riverside 2008).

Various reports also noted unexplained abandonment of entire colonies at advanced stages of nesting. One factor may be insufficient food supplies to support the young (County of Riverside 2008). Another factor may be human activities, because localized abandonment of active nests have been observed where colonies were entered and human-related activities were adjacent to the colony for several hours (Beedy and Hayworth 1992). Also, because nests are colonial, tricolored blackbirds are susceptible to massive nest destruction and failure from predators (Beedy *et al.* 1991).

Tricolored blackbirds have shown reproductive failure as a result of pesticides and other toxins. During 1986, Beedy and Hayworth (1992) observed almost complete nesting failure of a large colony (about 47,000 adults) at Kesterson Reservoir, Merced County, an area contaminated by selenium deposited from agricultural drainage water. At a Kern County colony, all eggs sprayed with mosquito abatement oil failed to hatch (County of Riverside 2008). The loss of at least two colonies has been attributed to aerial herbicide applications (County of Riverside 2008).

As with other wetland and riparian species, tricolored blackbirds may be sensitive to several other human- or development-related impacts. Construction-related dust; noise and ground vibration; nighttime lighting; and diminished water quality and altered hydrology are all factors that could affect tricolored blackbirds in the short term. Noise; lighting; diminished water quality and altered hydrology (*e.g.*, groundwater pumping and dewatering); increased human activity; and predation by pet, stray, and feral cats and dogs and other mesopredators are all factors that could affect tricolored blackbirds over the long term. Overgrazing of pastures and grassland may reduce important prey for tricolored blackbirds, such as grasshoppers.

Survey Results

Surveys for riparian species have been conducted over multiple years along the Santa Clara River within suitable habitat for the tricolored blackbird. These surveys were conducted from 1988 through 2006 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.* in 1994, 1996, and 1997 (1995, 1996, 1997A, 1997B) and Labinger and Greaves in 1998 (1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (2007A, 2008). These surveys generally included both the riparian habitat within the River corridor and adjacent fields, both of which are suitable breeding and foraging habitat for the tricolored blackbird.

This species has been observed on the Project site during focused bird surveys. Migrants have also been observed within the Specific Plan area (Guthrie 1996B, 1999B), the VCC planning area (Guthrie 1999A, 2006C), and off site in Castaic Junction (Guthrie 1995A, 2000E, 2001A, 2006C; Dudek and Associates 2006E) during surveys. Except for 1994, no breeding colonies have been observed, despite annual surveys from 1988 to 2007. According to Guthrie (1994A), a colony of about 200 breeding pairs was observed in a small marsh area along the side of the Santa Clara River at the Castaic Junction east of the RMDP Project area and another smaller colony of about 20 breeding pairs was observed in a pond beside Castaic Creek within the SCP boundary, which appeared to be an old borrow pit left over from work on the flood control dikes. Neither of the colonies had been observed in previous survey years, and Guthrie (1994A) suggested that rains in 1994 resulted in standing water and lush growth of cattails in both locations. Guthrie stated that "a small number of tricolored blackbirds appeared in April and May and inspected the Castaic Creek site. However, the birds apparently found the site unsuitable and did not attempt to breed." (Guthrie 1995A).

It is unknown why tricolored blackbirds apparently attempted nesting in the Project vicinity only in 1994. On site, there is some suitable nesting habitat within marsh habitat that may be present during wet periods within the Santa Clara River and Castaic Creek. There are also agriculture areas and some grassland areas adjacent to portions of the river in the RMDP area and the VCC planning area that are suitable foraging habitat. As noted above, however, colonies may change nesting locations from year to year, and they require secure nesting sites (County of Riverside 2008). It is possible that the increased urbanization in the area over the last decade, including increased traffic and noise, has resulted in nesting habitats not being secure enough to attract

breeding colonies. Tricolored blackbirds are easily disturbed during settlement, egg-laying, and early incubation (County of Riverside 2008).

Nesting habitat in the Project area for the tricolored blackbird includes bulrush–cattail wetland and coastal and valley freshwater marsh, which total 3.4 acres. Foraging habitat includes cismontane alkali marsh, herbaceous wetland, grasslands (California annual grassland, purple needlegrass), agriculture, and disturbed land, which total 5,320 acres. A total of 5,324 acres of nesting and foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 224 acres of suitable nesting and foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 4.2% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to California Annual Grassland, Agriculture, and Disturbed Land Wildlife Habitat). Of these impacts, 1.6 acres are to nesting habitat, representing 47.0% of this habitat on site. The remaining 222 acres of impact are to foraging habitat, representing 4.2% of this habitat on site. A total of 98 acres of suitable foraging habitat would be temporarily impacted, but no nesting habitat would be temporarily impacted.

The tricolored blackbird may occur on site as a migrant or during the winter and also was recorded nesting on site in 1994, as noted above. However, currently there is little suitable nesting habitat in the Project area (3.4 acres), and because the tricolored blackbird has not been observed nesting on site since 1994, conditions may no longer be suitable for nesting. Therefore, the permanent loss of 1.6 acres of nesting habitat, 222 acres of suitable foraging habitat, and temporary impacts to foraging habitat that would occur as a result of construction/grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species

on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,081 acres of suitable nesting and foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 57.9% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat, and **Figure 4.5-66**, Alternative 2 Impacts to California Annual Grassland, Agriculture, and Disturbed Land Wildlife Habitat). Of these impacts, 0.3 acre is nesting habitat, representing 8.8% of this habitat on site. The remaining 3,081 acres of impact are foraging habitat, representing 57.9% of this habitat on site.

There is little suitable nesting habitat for the tricolored blackbird in the Project area, and no nesting colonies have been observed on site since 1994. Therefore, the loss of 0.3 acre of nesting habitat would not have a substantial adverse effect on the tricolored blackbird. However, this species has been observed using this site as foraging habitat during migration. In addition, foraging habitat is important for the nesting success of colonies even if the nesting colony is not specifically located in the Project area. A relatively large amount and percentage of on-site foraging habitat for the tricolored blackbird would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from foraging in approximately 57.9% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable nesting and foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,305 acres (62.1%). Of these impacts, 2.0 acres are nesting habitat, representing 55.8% of this habitat on site. The remaining 3,304 acres of impact are foraging habitat, representing 62.1% of this habitat on site.

There is little suitable nesting habitat for the tricolored blackbird in the Project area, and no nesting colonies have been observed on site since 1994. Therefore, the combined

direct and indirect permanent loss of 1.9 acres of nesting habitat would not have a substantial adverse effect on the tricolored blackbird. However, this species has been observed using this site as foraging habitat during migration. In addition, foraging habitat is important for the nesting success of colonies even if the nesting colony is not specifically located in the Project area. A relatively large amount and percentage of on-site foraging habitat for the tricolored blackbird would be permanently lost as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from foraging in approximately 62.1% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The tricolored blackbird is a relatively mobile species, and it is unlikely that Project-related construction activities would result in injury or mortality of individual adult birds. However, foraging birds may be displaced from suitable foraging habitat or disturbed during foraging activities. Also, because the species has potential to nest on site in habitat that would be directly affected, implementation of the RMDP could result in loss of young or eggs of this species as a result of destruction of nests from any construction/grading activities that occur during the nesting season. Construction activities may also cause nest abandonment and consequent loss of the nest to exposure, starvation, or predation. Implementation of the SCP would not directly impact this species. Because of the special status of this species and the potential for foraging disruptions or injury or mortality of individual birds, including the loss of young and/or eggs as a result of nest destruction or abandonment during construction/grading activities, implementation of the RMDP would have a substantial adverse effect on this species; impede the use of a native wildlife nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. Because the species has potential to forage and nest on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could result in disruption of foraging activities or

loss of young or eggs of this species as a result of destruction or abandonment of nests from any construction/grading activities that occur during the nesting season. The build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Potential short-term construction-related secondary impacts to the tricolored blackbird include disruptions of essential behaviors associated with noise, ground vibration, dust, and nighttime illumination. Breeding habitat may be affected by diminished water quality and altered hydrology (*e.g.*, dewatering). Tricolored blackbirds that are foraging on site may be inhibited from foraging in areas in close proximity to construction activities. In addition, nesting colonies are highly sensitive to human disturbance (*e.g.*, Beedy and Hayworth 1992) and construction activities occurring in proximity to nesting areas could cause nest failure and abandonment of the nesting site. Long-term secondary impacts include traffic noise; nighttime illumination; increased human activity; pesticide use that could result in loss of prey, secondary poisoning, and direct toxic effects on eggs (County of Riverside 2008); harassment and predation by pet, stray, and feral cats and dogs; increased predation by mesopredators; and diminished water quality and altered hydrology.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The trail and viewing platforms will be used by the public during daytime hours. There is a potential for secondary impacts to tricolored blackbirds that could nest in areas that are adjacent to the trail and viewing platforms. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities, such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is the potential for increased trash along the trail that could enter the River Corridor SMA. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is potential for unauthorized trespass by the public into sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during the nighttime hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success if tricolored blackbirds attempted to nest near trails and viewing platforms.

If tricolored blackbirds attempt to breed on site, both short-term and long-term secondary impacts may prevent successful nesting, which would permanently reduce the number of tricolored blackbirds. In addition, the secondary impacts may permanently reduce the foraging that occurs on site, interfere with the movement of the tricolored blackbird in the Project vicinity, and contribute to the reduction of the range and distribution of the tricolored blackbird in the Project area (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and foraging habitat for the tricolored blackbird (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to California Annual Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 205 acres (3.9%) permanent loss and 137 acres of temporary loss of nesting and foraging habitat, including
  - 1.1 acres (32.3%) of permanent loss and 0.5 acre temporary loss of nesting habitat
  - 204 acres (3.8%) of permanent loss and 137 acres of temporary loss of foraging habitat;
- Alternative 4 – 187 acres (3.5%) of permanent loss and 147 acres of temporary loss of nesting and foraging habitat, including
  - 1.1 acres (32.3%) of permanent loss and 0.4 acre of temporary loss of nesting habitat
  - 186 acres (3.5%) of permanent loss and 146 acres of temporary loss of foraging habitat;
- Alternative 5 – 243 acres (4.6%) of permanent loss and 124 acres of temporary loss of nesting and foraging habitat, including
  - 1.1 acres (32.3%) of permanent loss and 0.8 acre of temporary loss of nesting habitat
  - 241 acres (4.5%) of permanent loss and 123 acres of temporary loss of foraging habitat;

- Alternative 6 – 246 acres (4.6%) of permanent loss and 136 acres of temporary loss of nesting and foraging habitat, including
  - 1.2 acres (35.3%) of permanent loss and 0.3 acre of temporary loss of nesting habitat
  - 245 acres (4.6%) of permanent loss and 136 acres of temporary loss of foraging habitat; and
- Alternative 7 – 113 acres (2.1%) of permanent loss and 442 acres of temporary loss of nesting and foraging habitat, including
  - No permanent loss and 0.2 acre of temporary loss of nesting habitat
  - 113 acres (2.1%) of permanent loss and 442 acres of temporary loss of foraging habitat.

Compared to Alternative 2 for nesting and foraging habitat, which would result in 224 acres (4.2%) of permanent loss and 98 acres of temporary impacts, Alternatives 3 and 4 would have somewhat reduced permanent impacts, Alternatives 5 and 6 would have somewhat higher impacts, and Alternative 7 would have substantially reduced impacts. Alternatives 3 through 6 would have somewhat higher temporary impacts compared to Alternative 2, and Alternative 7 would have substantially higher temporary impacts. Alternative 7 has substantially lower permanent impacts and substantially higher temporary impacts compared to the other alternatives because of the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Alternatives 3 through 6 would have substantially reduced permanent impacts to nesting habitat compared to Alternative 2, which would impact 1.6 acres. Alternative 7 would have no permanent impacts to nesting habitat due to the pullback of RMDP facilities from the Santa Clara River and its tributaries. However, Alternatives 3 through 7 would have temporary impacts to nesting habitat, compared to no temporary impacts under Alternative 2.

For foraging habitat, the comparison of alternatives is similar to that described above for overall impacts because foraging habitat comprises the vast majority (99%+) of the total habitat for the tricolored blackbird in the Project area.

As concluded for Alternative 2, the permanent loss of 0.0 to 1.2 acres of nesting habitat under Alternatives 3 through 7 would not have a substantial adverse effect on the tricolored blackbird because of the small amount (3.4 acres) of suitable nesting habitat on site and the lack of breeding activity in the Project area. Also, a relatively small percentage of foraging habitat (2.1% to 4.6%) would be permanently lost under all the alternatives as a result of implementation of the RMDP. These impacts would not be

considered a substantial adverse effect on the habitat of a special-status species; would not impede the use of a native wildlife nursery site; would not have the potential to substantially reduce the habitat of the species on site or rangewide; would not cause the species to drop below self-sustaining levels on site or rangewide; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species. The direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the tricolored blackbird (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat, and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to California Annual Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,996 acres (55.5%) permanent loss of foraging habitat and no loss of nesting habitat;
- Alternative 4 – 2,822 acres (53.0%) permanent loss of foraging habitat and 0.2 acre (5.9%) of nesting habitat;
- Alternative 5 – 2,767 acres (52.0%) permanent loss of foraging habitat and no loss of nesting habitat;
- Alternative 6 – 2,548 acres (47.9%) permanent loss of foraging habitat and no loss of nesting habitat; and
- Alternative 7 – 2,087 acres (39.2%) permanent loss of foraging habitat and no loss of nesting habitat.

Compared to Alternative 2 for nesting and foraging habitat, which would result in 3,081 acres (57.9%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 6 would have substantially reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions under Alternatives 4 through 7 due to reduced Project footprints, and Alternative 7 would be substantially reduced compared to the other alternatives because large agricultural areas along the Santa Clara River associated with Landmark Village and Homestead East (the Onion Fields) would not be developed.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, they would result in substantial impacts to foraging habitat, ranging from 39.2% under Alternative 7 to 55.5% under Alternative 3. These impacts would have a substantial

adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following combined direct and indirect permanent impacts to suitable habitat for the tricolored blackbird:

- Alternative 3 – 3,161 acres (59.4%) permanent loss of nesting and foraging habitat, including
  - 1.1 acres (32.3%) of permanent loss of nesting habitat
  - 3,160 acres (59.4%) of permanent loss of foraging habitat;
- Alternative 4 – 3,009 acres (56.5%) permanent loss of nesting and foraging habitat, including
  - 1.3 acres (38.2%) of permanent loss of nesting habitat
  - 3,008 acres (56.5%) of permanent loss of foraging habitat;
- Alternative 5 – 3,009 acres (56.5%) permanent loss of nesting and foraging habitat, including
  - 1.1 acres (32.3%) of permanent loss of nesting habitat
  - 3,008 acres (56.5%) of permanent loss of foraging habitat;
- Alternative 6 – 2,794 acres (52.5%) permanent loss of nesting and foraging habitat, including
  - 1.2 acres (35.3%) of permanent loss of nesting habitat
  - 2,793 acres (52.5%) of permanent loss of foraging habitat; and
- Alternative 7 – 2,200 acres (41.3%) permanent loss of nesting and foraging habitat, including
  - No permanent loss of nesting habitat
  - 2,200 acres (41.3%) of permanent loss of foraging habitat;

Compared to Alternative 2 for nesting and foraging habitat, which would result in 3,305 acres (62.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 6 would have substantially reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions under Alternatives 4 through 7 due to reduced Project footprints, and Alternative 7 would be substantially reduced compared to the other alternatives because large agricultural areas along the Santa Clara River associated with Landmark Village and Homestead East (the Onion Fields) would not be developed.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, they would result in substantial impacts to foraging habitat, ranging from 41.3% under Alternative 7 to 59.4% under Alternative 3. These impacts would have a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to tricolored blackbird individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Suitable foraging and nesting habitat is present on site and there is potential for the species to nest on site. Foraging behavior may be disrupted by construction/grading activities, and if construction occurs during the breeding season, these activities could result in impacts to eggs or young where the species is nesting. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Short-term effects include construction-related noise, lighting, and disturbance from human activity that could cause nest site abandonment by a colony, and dust, diminished water quality, and altered hydrology that could affect breeding habitat quality. Urban development could result in long-term secondary effects, such as traffic noise; increased human activity; nighttime lighting; diminished water quality and altered hydrology; harassment and predation by pet, stray, and feral cats and dogs; increased mesopredators; and effects of pesticides such as loss of prey, direct toxic effects on eggs, and secondary poisoning.

There would be no viewing platforms constructed in the River Corridor SMA under Alternatives 3 through 7.

These short-term and long-term secondary impacts therefore may cause habitat degradation, impede use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to tricolored blackbird: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by tricolored blackbirds has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, the tricolored blackbird has nested in the Project vicinity outside of the affected area in the Santa Clara River and Castaic Creek in the past and it is assumed that the species could nest in the Project area in the future. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if colonies and active nests are disturbed during vegetation clearing and other construction/grading activities in suitable breeding habitat, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nesting colonies and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable nesting and foraging habitat for the tricolored blackbird resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,200 acres (41.4%) for foraging habitat (no impact to nesting habitat) under Alternative 7 to 3,305 acres (62.1%) under Alternative 2, of which 3,304 acres are foraging habitat and 2.0 acres are nesting habitat.

The loss of foraging habitat would be a substantial loss of suitable habitat for this species and could alter its use of the Project area for foraging. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide both suitable nesting and foraging habitat to support the tricolored blackbird in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 1,181 acres of suitable habitat for the tricolored blackbird in the River Corridor SMA, High Country SMA, and the Salt Creek area. Although all but about 2.0 acres of this habitat is currently foraging habitat composed of California annual grassland, agriculture, and disturbed land, the River Corridor SMA provides riparian and wetland communities that may become suitable for nesting (e.g., development of marsh) at times in relation to dynamic changes in the River system.

With regard to secondary effects, nesting and foraging activities by the tricolored blackbird could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging, cause adults to abandon nests and otherwise disrupt normal behavioral patterns and cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect nesting habitat quality for the tricolored blackbird. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented to protect wetland habitats that will reduce impacts to the tricolored blackbird. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include noise; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); diminished water quality, affecting habitat quality; lighting; pesticides, which may have toxic effects on eggs or secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of about 1,181 acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek, area will provide tricolored blackbirds with relatively undisturbed habitat for foraging (**Figure 4.5-3**). Protection of the River Corridor SMA will provide potential nesting habitat in areas where marsh habitats may develop. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education

regarding special-status resources in preserved natural habitat areas will help protect tricolored blackbirds by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of toxic impacts on eggs, secondary poisoning, and loss of prey.

The specific mitigation measures for the tricolored blackbird are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-73 IMPACTS TO INDIVIDUALS – TRICOLORED BLACKBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, or mitigate impacts to tricolored blackbird individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to tricolored blackbird individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall

continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to tricolored blackbird individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-74 LOSS OF HABITAT – TRICOLORED BLACKBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for tricolored blackbird through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 281 acres of suitable foraging habitat for the tricolored blackbird**.** The High Country SMA will preserve and enhance 576 acres of suitable habitat for the tricolored blackbird, including 575 acres of foraging habitat and 1.4 acres of nesting habitat.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the tricolored blackbird through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area supports 324 acres of suitable foraging habitat for the tricolored blackbird.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the tricolored blackbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-75 SECONDARY IMPACTS – TRICOLORED BLACKBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the tricolored blackbird associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as increased human activity, increased traffic noise, and nighttime lighting. Mitigation measures to avoid and minimize impacts to water quality and hydrology and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for the effects of increased human activity and increased traffic noise.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect tricolored blackbird nesting habitat and/or breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to the tricolored blackbird, including short-term construction-related noise, ground vibration, dust, increased human activity, and diminished water quality, and long-term impacts, such as long-term increased human activity; harassment and predation by pet, stray, and feral cats and

dogs; and toxic effects on eggs, secondary poisoning, and loss of prey due to the use of pesticides.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest areas and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the tricolored blackbird nesting habitat during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for tricolored blackbird during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to the tricolored blackbird by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 and BIO-19, as described above, will mitigate for increased human activity and traffic noise in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity, and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the tricolored blackbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

VERMILION FLYCATCHER (NESTING) (CSC)

Life History

The vermilion flycatcher (*Pyrocephalus rubinus*) is a common breeder in southern Arizona, New Mexico, and Texas (Wolf and Jones 2000). It breeds in Arizona from the northwest and Mogollon Rim south throughout the state, is common along the base of the Huachuca Mountains and is a locally common breeder on the lower Verde and Salt rivers in Maricopa County, Arizona. It also commonly breeds in southern New Mexico in the Pecos, San Francisco, Gila, and lower–middle Rio Grande valleys. In Texas, the vermilion flycatcher breeds in the western and central portions of the state, mainly in central and southern Trans-Pecos and Edwards Plateau, and north into areas south of the panhandle and southeast to the lower Texas coast (Wolf and Jones 2000). It is a rare and local breeder along the Salt and Colorado rivers (Wolf and Jones 2000). The vermilion flycatcher is normally a year-round resident throughout all but the northernmost portion of the breeding range in the United States, Mexico, and Central America. Its range during the winter fluctuates with winter conditions; in some winters, the species wanders along river corridors outside its normal range (Grinnell and Miller 1944). The vermilion flycatcher may winter outside of its breeding range throughout the coastal plain of Texas (Wolf and Jones 2000), in deserts of southeastern California north to southern Inyo County (Garrett and Dunn 1981), in southwestern Arizona (Wolf and Jones 2000), and into portions of Mexico (Wolf and Jones 2000). A few individuals winter regularly along the California coast north to Ventura County and occasionally to San Luis Obispo County, along the Gulf Coast of Texas, rarely north to southern Arkansas, throughout the mainland of Florida, and along the Atlantic Coast of Mexico (Wolf and Jones 2000).

In California, the vermilion flycatcher was formerly considered a more common and widespread breeder along the lower Colorado River, Imperial Valley, Coachella Valley, upper Mojave River drainage, and San Diego County (Grinnell and Miller 1944; Garrett and Dunn 1981), but its breeding range has declined throughout this area (Wolf and Jones 2000). Currently, in California, there are some isolated breeding populations in the lowlands in the south central and southeast portions of the state, including San Bernardino, Riverside, San Diego, Santa Barbara, Ventura, and Kern counties (Wolf and Jones 2000). Zeiner *et al.* (1990A) state that there are sporadic breeding populations in desert oases west and north of the Morongo Valley and Mojave Narrows in San Bernardino County. It has been recorded in summer along the Santa Clara River near Castaic and at Frazier Park, Kern County; however, there has been no evidence of breeding, and these observations are likely vagrants (Garrett and Dunn 1981).

The vermilion flycatcher appears to be a strict insectivore with no records of plant material being consumed. It has been recorded eating insects and other arthropods, honeybees, grasshoppers, beetles, and crickets (Wolf and Jones 2000).

Although the vermilion flycatcher is largely a resident species, where it does show migratory movements, the male arrives to the breeding locations in February or March and females arrive afterwards, typically in March or April, depending on location (Wolf and Jones 2000). Males play a large role in determining the nest site, which is built in a horizontal fork or branch under a canopy in an area free of leaves, about eight to 20 feet above ground (Wolf and Jones 2000; Tinkham 1949). The nest is a shallow open cup, loosely constructed out of small twigs, forbs, rootlets, grasses, fibers, or other similar materials and is lined with feathers and hair (Wolf and Jones 2000).

This species primarily is threatened by the degradation and loss of habitat. The abundance and distribution of this species has been drastically reduced over the last 50 years in the lower Colorado River Valley. Water management, such as groundwater pumping and damming, can reduce and degrade riparian habitat and remove vegetation, such as cottonwoods and willows, that is critical to its breeding. Urbanization and human development have also degraded or reduced vermilion flycatcher habitat. Like other riparian bird species, however, several other potential human- or development-related factors may affect the vermilion flycatcher. Construction-related impacts include dust; noise and ground vibration; diminished water quality and altered hydrology; increased human activity in close proximity to foraging areas; and lighting, which may alter foraging behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include increased human activity; noise; lighting; diminished water quality and altered hydrology; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and pesticides, which may reduce insect prey or cause secondary poisoning.

Survey Results

Suitable nesting and foraging habitat for the vermilion flycatcher exists in riparian woodland habitat along the Santa Clara River and Castaic Creek in the Project area. However, only one observation of a vermilion flycatcher has been documented during annual riparian bird surveys conducted from 1988 to 2007 along the Santa Clara River (Bloom Biological 2007A; Guthrie 1988, 1989, 1990, 1991A, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2006A, 2006C; Labinger *et al.* 1995, 1997B; Labinger and Greaves 1999A). The single observation of vermilion flycatcher in the Santa Clara River was by Guthrie in 1993 and was characterized as an "immature and possibly a post-breeding wanderer" (Guthrie 1993B).

Because the vermilion flycatcher has only been observed once in the Project area over multiple years of surveys it is assumed for the purpose of this analysis that this species occurs only rarely as a vagrant. Southern cottonwood–willow riparian, southern coast live oak riparian forest,

Mexican elderberry, and southern willow scrub are suitable habitat for this species when it does occur on site. A total of 458 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 40 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

The vermilion flycatcher is a wide-ranging species that may only occur on site as an occasional vagrant and uses a variety of riparian-associated habitats. The construction of RMDP facilities would be phased over a long period of time, and hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for individuals of this species occasionally using the Project area at any given time. Therefore, the permanent loss of 40 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 14 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 3.1% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the vermilion flycatcher is a wide-ranging species that may only occur on site as an occasional vagrant and is not expected to nest in the Project area, the loss of 14 acres would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 54 acres (11.9%). Because the vermilion flycatcher is a wide-ranging species that may only occur on site as an occasional vagrant and is not expected to nest in the Project area, the loss of 54 acres of habitat from the combined direct and indirect permanent impacts of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The vermilion flycatcher is a mobile species that may only occasionally occur on site as a vagrant and is not expected to nest in the Project area because it has not been observed on site in over 10 years. It is highly unlikely that construction activities associated with implementation of the RMDP would result in the direct loss of individual adult birds. Foraging and resting behavior, however, may be somewhat disrupted by construction activities because individuals would probably avoid or leave construction areas for other undisturbed habitat areas. The vermilion flycatcher is not expected to breed on site so

nests with eggs or young would not be affected. Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The vermilion flycatcher is a mobile species and it is highly unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. Foraging and resting behavior, however, may be somewhat disrupted by construction activities because individuals would probably avoid or leave construction areas for other undisturbed habitat areas. The vermilion flycatcher is not expected to breed on site so nests with eggs or young would not be affected. Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, increased human activity, nighttime illumination, and diminished water quality and altered hydrology. These effects may disturb vermilion flycatchers that use the site for resting and foraging, causing them to avoid or leave areas near construction, or reducing habitat quality and affecting prey abundance.

Potential long-term secondary impacts associated with urban development include traffic noise, nighttime illumination, invasion of suitable habitat by exotic species such as giant reed and tamarisk; increased litter; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in vermilion flycatchers avoiding or leaving areas subject to these effects and there would be increased potential for predation of individuals.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, and thus impacts to suitable habitat for the vermilion flycatcher, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue.

As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and would not be significantly affected.

Because the vermilion flycatcher is a wide-ranging species that may only occasionally use habitat in the Project area, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the vermilion flycatcher (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitats):

- Alternative 3 – 27 acres (5.8%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 27 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 33 acres (7.1%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 18 acres (4.0%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.7%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 40 acres (8.8%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially reduced. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be marginally to somewhat different and Alternative 7 would be substantially reduced. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to

Alternative 2, and temporary impacts would range from similar in magnitude to substantially reduced, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the vermilion flycatcher (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitats):

- Alternative 3 – 13 acres (2.8%) of permanent loss;
- Alternative 4 – 9.6 acres (2.1%) of permanent loss;
- Alternative 5 – 8.6 acres (1.9%) of permanent loss;
- Alternative 6 – 6.0 acres (1.3%) of permanent loss; and
- Alternative 7 – 4.5 acres (1.0%) of permanent loss.

Compared to Alternative 2, which would result in 14 acres (3.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternative 3 would have somewhat reduced impacts compared to Alternative 2, and Alternatives 4 through 7 would have successively reduced impacts compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the vermilion flycatcher:

- Alternative 3 – 40 acres (8.6%) of permanent loss;
- Alternative 4 – 37 acres (8.1%) of permanent loss;
- Alternative 5 – 41 acres (9.0%) of permanent loss;
- Alternative 6 – 24 acres (5.3%) of permanent loss; and
- Alternative 7 – 12 acres (2.7%) of permanent loss.

Compared to Alternative 2, which would result in 54 acres (11.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced

impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for the vermilion flycatcher occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to vermilion flycatcher individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Adult birds would likely avoid impacts during construction activities by avoiding or leaving construction areas, resulting in potential impacts to foraging and resting. Because the species does not nest on site, nests with eggs and young would not be affected. Because the vermilion flycatcher is a wide-ranging species and may only occur on site as an occasional vagrant, direct and indirect permanent impacts (Impacts to Individuals) would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Short-term impacts include construction-related dust; noise and ground vibration; increased human activity; nighttime illumination; and diminished water quality and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include increased human activity; diminished water quality; traffic noise; nighttime illumination; exotic plant species; litter; pesticides; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2.

Because the vermilion flycatcher is a wide-ranging species and may only occasionally occur on site as a vagrant, these potential short-term and long-term secondary effects would not have a substantial adverse effect on the species and would not contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the vermilion flycatcher because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and

management of approximately 326 acres of suitable riparian habitat in the River Corridor SMA, as well as drainages in the Salt Creek area and High Country SMA that contain riparian habitats. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction, because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides, will also be mitigated through a variety of measures.

YELLOW-BREASTED CHAT (NESTING) (CSC)

Life History

The yellow-breasted chat (*Icteria virens*) has a broad geographic range occurring in several disjunct areas in the United States, southwestern portions of Canada, and Mexico. Its breeding range includes the eastern United States from Wisconsin south to the Gulf coast, and east to the Atlantic Coast. Western breeding populations occur along the Pacific Coast, within the Great Basin valleys, lower montane portions of the Rocky Mountains, and south into Arizona and New Mexico, with isolated populations in Texas (Dunn and Garrett 1997). The yellow-breasted chat is an uncommon summer resident and migrant in coastal California and in the foothills of the Sierra Nevada (Zeiner *et al.* 1990A). The yellow-breasted chat is found at elevations up to 1,450 meters (4,800 feet) AMSL in valley foothill riparian habitat and up to 2,050 meters (6,500 feet) AMSL east of the Sierra Nevada in desert riparian habitat (Gaines 1977; DeSante and Ainley 1980; Garrett and Dunn 1981). The yellow-breasted chat is uncommon along the coast of northern California and occurs locally only south of Mendocino County (McCaskie *et al.* 1979). In southern California, the yellow-breasted chat breeds locally on the coast and very locally inland at lower elevations throughout the region (Garrett and Dunn 1981).

In the western United States, the yellow-breasted chat requires riparian thickets and riparian woodlands with a dense understory for nesting (Eckerle and Thompson 2001). In southern California, the yellow-breasted chat nests in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories. Nesting areas are associated with streams, swampy ground, and the borders of small ponds (Zeiner *et al.* 1990A). Grinnell and Miller (1944) suggested that plant cover in breeding habitat must be dense to provide shade and concealment. During the spring and fall migration, the yellow-breasted chat uses the same low, dense vegetation used as breeding and wintering grounds, although spring migrants are occasionally found in suburban habitats (Parnell 1969). Winter habitat is similar in structure to that used for breeding and migration with dense, low cover of woody vegetation (Eckerle and Thompson 2001).

The yellow-breasted chat feeds on small invertebrates, including insects and spiders, during the summer and forages for berries and fruits from shrubs and low trees when available (Bent 1953). It forages in low, dense shrubs and thickets, gleaning individual prey from the foliage (Whitmore 1977). Young are fed soft-bodied insects such as grasshoppers and crickets and insect larvae (Eckerle and Thompson 2001).

Yellow-breasted chat pairs typically build nests 0.6 to 2.4 meters (2.0 to 7.9 feet) above ground in dense shrubs along streams or rivers. The yellow-breasted chat is a neotropical migrant that usually arrives in the United States and Canada in April to breed and leaves for wintering grounds in Mexico and Guatemala in late September (Zeiner *et al.* 1990A). During the breeding season, the male maintains and defends an individual territory. In a low-density population in

southern Indiana, territory size ranged from 1.1 to 1.6 hectares (2.7 to 3.9 acres) with rare male–male confrontations (Thompson and Nolan 1973). In a high-density population, territory size ranged from 0.5 to 1.0 hectare (1.2 to 2.5 acres), with frequent male–male confrontations (Zeiner *et al.* 1990A).

The yellow-breasted chat is primarily threatened by loss of riparian habitat. In California, this species has declined due to the loss of riparian habitats and parasitism by brown-headed cowbirds (Zeiner *et al.* 1990A). The loss, fragmentation, and degradation of riparian habitat in California coastal lowlands as a result of development, agriculture, and channeling of rivers are factors have led to the decline of the yellow-breasted chat in southern California. Heavy cattle grazing may cause a decline of dense, shrubby areas used for nesting (Johnston and Odum 1956). Garrett and Dunn (1981) concluded that the clearing of dense riparian thickets and brushy tangles in southern California caused a noticeable decline in the number of breeding birds, with cowbird parasitism possibly contributing to their decline (Remsen 1978). The frequency of cowbird parasitism varies from 5% to 91% across the breeding range (Eckerle and Thompson 2001). However, Thompson and Nolan (1973) found that, following hatching, nestlings are able to compete with cowbird nestlings and then survive to fledge. Like other riparian bird species, several other potential human- or development-related factors may affect yellow-breasted chats. Construction-related impacts include dust; noise and ground vibration; diminished water quality and altered hydrology; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include invasive plant species such as giant reed and tamarisk, which degrade habitat quality; increased human activity; noise; lighting; diminished water quality and altered hydrology; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants, which are especially attracted to riparian areas and may prey on nestlings.

Survey Results

Surveys for riparian birds have been conducted for multiple years along the Santa Clara River within suitable habitat for the yellow-breasted chat. On site, this species was observed nesting in riparian thickets in 2007 (Bloom Biological 2007A) and has also been observed over multiple years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River within the riparian scrub and woodland habitat (Guthrie 1988, 1989, 1990, 1991A, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2006A, 2006C; Labinger *et al.* 1995, 1997B; Labinger and Greaves 1999A). Other recent observations were made along the Santa Clara River within the Specific Plan area and in Castaic Creek in the VCC planning area in 2006 (specific locations not mapped), where yellow-breasted chats were observed calling from territories in the riparian woodland (Guthrie 2006A, 2006C). There is suitable nesting habitat within the riparian scrub

and woodland habitats on site along the Santa Clara River in the Specific Plan area and along Castaic Creek in the VCC planning area.

Southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub are suitable nesting and foraging habitat for the yellow-breasted chat. There is a total of 445 acres of suitable habitat in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 39 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

The yellow-breasted chat is still a wide-ranging species and uses a variety of riparian associated habitats. The construction of RMDP facilities would be phased over a long period of time, and hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. Therefore, the permanent loss of 39 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 7.8 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 1.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the yellow-breasted chat is still a wide-ranging species and uses a variety of riparian associated habitats, the permanent loss of 7.8 acres of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 47 acres (10.4%). Because the yellow-breasted chat is still a wide-ranging species, uses a variety of riparian associated habitat, and because the construction activities would be phased over a long period of time, hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. Therefore, the combined permanent loss of 47 acres of habitat that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction. These impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The yellow-breasted chat is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality of individual adult birds. However, implementation of the RMDP could result

in injury or mortality of yellow-breasted chats due to destruction of nests and loss of young if such construction/grading activities occurred during the nesting season. In addition, construction activities could alter the yellow-breasted chat's foraging behavior, potentially affecting the health of young and potentially reducing survivorship and reproductive success. Implementation of the SCP would not directly impact this species. Construction/grading activities, such as vegetation clearing, occurring during the nesting season could result in destruction of nests and the resulting loss of eggs and/or young (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. Because the species has potential to nest on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could result in loss of young or eggs of this species as a result of destruction of nests from any construction/grading activities that occur during the nesting season or alteration of foraging behavior. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. These impacts could alter essential behaviors such as foraging and breeding, induce physiological stress, and increase predation rates. Fugitive dust, diminished water quality, and altered hydrology (*e.g.*, runoff, erosion, sedimentation) could reduce habitat quality, including insect prey. Although construction would be short term in nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of breeding and nesting activities.

Potential long-term secondary impacts associated with urban development include traffic noise (similar to the noise effects discussed in detail above for least Bell's vireo); nighttime illumination; invasion by exotic species such as giant reed and tamarisk and Argentine ants which are attracted to riparian areas and may prey on nestlings; increased litter; cowbird nest parasitism; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, and thus impacts to nesting habitat for the yellow-breasted chat, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The trail and viewing platforms will be used by the public during daytime hours. There is a potential for secondary impacts to yellow-breasted chat nesting in areas that are adjacent to the trail and viewing platforms. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is the potential for increased trash along the trail that could enter the River Corridor SMA. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is potential for unauthorized trespass by the public into sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during the nighttime hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Short-term and long-term secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the yellow-breasted chat (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 25 acres (5.6%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 26 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 31 acres (7.0%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 17 acres (3.9%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.8%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 39 acres (8.7%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially reduced. Compared to Alternative 2, the temporary loss of habitat would be marginally reduced under Alternatives 3 and 6, somewhat reduced under Alternative 4, somewhat greater under Alternative 5, and substantially reduced under Alternative 7. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to Alternative 2, and temporary impacts would be similar in magnitude to substantially reduced, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the yellow-breasted chat (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 6.9 acres (1.6%) of permanent loss;
- Alternative 4 – 3.5 acres (0.8%) of permanent loss;

- Alternative 5 – 2.6 acres (0.6%) of permanent loss;
- Alternative 6 – 1.3 acres (0.3%) of permanent loss; and
- Alternative 7 – 0.7 acre (0.1%) of permanent loss.

Compared to Alternative 2, which would result in 7.8 acres (1.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 and 5 would have somewhat reduced impacts compared to Alternative 3 (which is marginally different than Alternative 2) and Alternatives 6 and 7 would have additional reductions compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the yellow-breasted chat:

- Alternative 3 – 32 acres (7.2%) of permanent loss;
- Alternative 4 – 29 acres (6.5%) of permanent loss;
- Alternative 5 – 34 acres (7.5%) of permanent loss;
- Alternative 6 – 19 acres (4.2%) of permanent loss; and
- Alternative 7 – 8.5 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (10.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for the yellow-breasted chat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to yellow-breasted chat individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would essentially be the same as for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The yellow-breasted chat is known to nest on site. Construction/grading activities such as vegetation clearing conducted during the breeding season could result in destruction of nests and loss of eggs and/or young where the species is nesting, and foraging behavior could be altered such that the health of young and survivorship and overall reproductive success would be reduced. Permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Potential short-term impacts include construction-related dust, noise, ground vibration, nighttime illumination, diminished water quality and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; diminished water quality; exotic plant and animal species; litter; cowbird nest parasitism; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2. All of these impacts occurring under Alternatives 3 through 7 could result in lower reproductive success of the yellow-breasted chat in the Project area.

Riparian habitat along the Santa Clara River would not be substantially affected over the long term by altered hydrology or geomorphology under Alternatives 3 through 7 (PACE 2009).

There would be no viewing platforms constructed in the River Corridor SMA under Alternatives 3 through 7.

These potential short-term and long-term secondary effects would have a substantial adverse effect on the species and would contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to yellow-breasted chat: (1) impacts to individuals; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint. Direct and indirect impacts to habitat were determined to be adverse but not significant.

Nesting by yellow-breasted chat has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

With regard to secondary effects, nesting and foraging activities by the yellow-breasted chat could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging and nest defense behavior, cause adults to abandon nests due to stress, and otherwise disrupt normal behavioral patterns, and cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect habitat quality and the insect prey base for the yellow-breasted chat, thus adversely affecting foraging behavior and provisioning of young. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented that will reduce impacts to yellow-breasted chat. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities; biological monitoring during any stream diversions; restrictions on construction equipment operating in ponds or flowing water; and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include habitat fragmentation; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); invasive species such as giant reed and tamarisk and Argentine ants which may prey on nestlings; cowbird parasitism; increased noise; diminished water quality, affecting prey and nesting habitat quality; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be

minimized through several mitigation measures. Protection, restoration and enhancement, and management of 314 acres of suitable habitat, primarily in the River Corridor SMA, but also the High Country SMA and Salt Creek area, will provide yellow-breasted chats with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect yellow-breasted chats by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Cowbird surveys will be conducted and trapping will be implemented if necessary. Controls on Argentine ants will help reduce impacts on young in nests.

The specific mitigation measures for the yellow-breasted chat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-76 IMPACTS TO INDIVIDUALS – YELLOW-BREASTED CHAT (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate impacts to yellow-breasted chat individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to yellow-breasted chat individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife;

review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity..

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to yellow-breasted chat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-77 SECONDARY IMPACTS – YELLOW-BREASTED CHAT (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the yellow-breasted chat associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such traffic noise, invasion by exotic plant species, abandonment of nests from human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for yellow-breasted chat that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to avoid and minimize impacts to water quality and hydrology and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

Additionally, SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA that will preserve and enhance at least 314 acres of suitable habitat for the yellow-breasted chat (**Figure 4.5-12**).

SP-4.6-17 will control public access to the River Corridor SMA and states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect yellow-breasted chat habitat and/or breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to yellow-breasted chat, including short-term construction-related dust, noise, ground vibration, and diminished water quality; and long-term impacts such as invasive species (including exotic plants, cowbirds, and Argentine ants); increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as indirect poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the yellow-breasted chat during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for arroyo toad during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to yellow-breasted chat by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-55 requires that existing maps of suitable riparian habitat for the least Bell's vireo, willow flycatcher/southwestern willow flycatcher, and western yellow-billed cuckoo be updated as needed and submitted to the Corps and CDFG. The removal of any riparian habitat suitable for

these species from the Project footprint shall be mitigated through the creation or enhancement of similar riparian habitat at an approved mitigation site or by the removal of exotic species from an area of existing similar habitat. Because the yellow-breasted chat uses the same habitat as these species, it will benefit from this mitigation measure.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed

within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to yellow-breasted chat by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the yellow-breasted chat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

YELLOW-HEADED BLACKBIRD (NESTING) (CSC)

Life History

The yellow-headed blackbird (*Xanthocephalus xanthocephalus*) occurs throughout the United States and in parts of Canada. Its breeding range occurs in the central and western United States, including eastern portions of Oregon and Washington. The eastern boundary of its breeding range lies within portions of Michigan and extends west and south toward western Texas. In Canada, this species breeds in central British Columbia, northern Alberta, central Saskatchewan, southern Manitoba, and southwest Ontario. Its wintering range extends from western and southern Arizona, southern New Mexico, and southern Texas through Mexico. Small numbers winter locally in Florida and California (Twedt and Crawford 1995).

In California, the yellow-headed blackbird is a common breeder along the lower Colorado River and the north and south ends of the Salton Sea. It occurs as a fairly common transient and local breeder in the Antelope Valley, and also has been recorded to breed occasionally in northern Kern and Ventura counties, western Riverside County, San Diego County, and possibly in Orange County (Garrett and Dunn 1981). It also breeds in the Klamath Basin, Modoc Plateau, Mono Basin, and Owens Valley. Generally, within the coastal regions of southern California, which include most of Los Angeles County, the yellow-headed blackbird is considered an uncommon to fairly common spring transient (Garrett and Dunn 1981).

The yellow-headed blackbird nests, roosts, and does much foraging within fresh emergent wetland habitat, and its overall distribution is limited based on the availability of this habitat (Twedt and Crawford 1995). It primarily occurs in prairie wetlands, but it is also found commonly in wetlands associated with quaking aspen parks, mountain meadows, and arid regions. The males arrive in breeding areas first to establish territories, and females select nest sites after selecting a territory, usually from mid-April to late July. Nests are placed close together in the colony in emergent wetlands over deeper water, usually in cattails, bulrushes, or reeds, and occasionally willows (Twedt and Crawford 1995; Zeiner *et al.* 1990A). Clutches range from two to five eggs (Zeiner *et al.* 1990A; Twedt and Crawford 1995) and are incubated for 10 to 13 days (Fautin 1941; Zeiner *et al.* 1990A). The young fledge and leave the nest after nine to 12 days although they do not fly until about 20 days (Zeiner *et al.* 1990A).

In California, most of the breeding population migrates south for the winter, but some individuals occur irregularly in the southern coastal areas, and more commonly in Imperial Valley (Zeiner *et al.* 1990A).

Foraging occurs within the wetland habitat when food is available, but yellow-headed blackbirds often forage in nearby open fields (*e.g.*, grasslands, croplands, or savannahs), preferably on moist ground. After breeding, they forage mostly in cropland and grassland (Twedt and Crawford 1995; Zeiner *et al*. 1990A).

Yellow-headed blackbirds mostly forage for insects during the breeding season and for seeds and grains during the post-breeding season (Twedt *et al*. 1991). During breeding, they feed on aquatic insects within the wetland territories and travel to grasslands and agriculture areas (*e.g.*, pastures and croplands) where invertebrate populations are abundant, sometimes feeding on snails and spiders (Zeiner *et al.* 1990A; Twedt and Crawford 1995). They forage as far as 1.6 kilometers (1 mile) from the nesting colony (Twedt and Crawford 1995). During this time, they probably require drinking water, and they return to the emergent wetlands at night to roost (Twedt and Crawford 1995).

The yellow-headed blackbird is vulnerable to habitat loss or degradation and to pesticide and herbicide use. For example, marsh drainage eliminated breeding populations in the San Fernando Valley (Small 1994). Aerial pesticides used in agriculture may drift into nearby wetland breeding colonies causing direct mortality of nestlings, or indirect mortality through a reduction in aquatic invertebrate food sources (Twedt and Crawford 1995). The use of herbicides may reduce suitable nesting habitat by removing nesting vegetation in the wetlands. Because these birds are colonial nesters, they are vulnerable to local extirpation, and pesticide use could devastate local breeding populations (Twedt and Crawford 1995). This species also may be affected by flooding of nests in areas with high water-level fluctuations, resulting in nest failure and nestling mortality. When adults are disturbed from the nest, unguarded eggs may be preyed upon by other birds, snakes, and mammals. In urbanized areas, predators may include cats and dogs and other mesopredators such as skunks, raccoons, and opossums. As with other wetland and riparian species, yellow-headed blackbirds may be sensitive to several other human- or development-related impacts. Construction-related dust, noise and ground vibration, nighttime lighting, and diminished water quality and altered hydrology are all factors that could affect yellow-headed blackbirds in the short term. Noise, lighting, diminished water quality and altered hydrology (*e.g.*, groundwater pumping and dewatering), and increased human activity are all factors that could affect yellow-headed blackbirds over the long term.

Survey Results

Surveys for riparian birds have been conducted for multiple years along the Santa Clara River and other portions of the Project area within suitable habitat for the yellow-headed blackbird. These surveys were conducted from 1988 through 2006 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.* or Labinger and Greaves in 1994, 1996, 1997 and 1998 (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E);

and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (2007A, 2008). These surveys generally included both the riparian habitat within the River corridor and adjacent fields, which provide suitable breeding and/or foraging habitat for the yellow-headed blackbird.

This species has occasionally been observed within the Specific Plan area (Guthrie 1996B, 1997B, 1999B, 2001B; Bloom Biological 2007A), in the VCC planning area (Guthrie 1997A, 2006C), and off site in Castaic Junction (Guthrie 1988, 2000E). The most recent observation was on April 1, 2007, of a single individual in a flock of red-winged blackbirds in agricultural fields (Bloom Biological 2007A). No nesting colonies (which would have been highly conspicuous given the colonial nesting behavior of this species) have been observed within the Project areas. Thus, while suitable nesting and foraging habitat occurs on the Project site, based on survey results, this species is expected to occur occasionally on site and only as a migrant or vagrant that uses the Project area for foraging; it is not expected to nest on site. For this reason, this EIS/EIR analyzes impacts to suitable foraging habitat only and does not address nesting habitat separately.

Suitable foraging habitat for the yellow-headed blackbird in the Project area includes agriculture, disturbed land, California annual grasslands, purple needlegrass, bulrush–cattail wetland, cistmontane alkali marsh, coastal and valley freshwater marsh, herbaceous wetland, and river wash, totaling 5,656 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 245 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 4.3% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat for nesting habitat and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and

Disturbed Land Wildlife Habitat for foraging habitat). A total of 136 acres would be temporarily impacted.

The yellow-headed blackbird is a wide-ranging species that may only occur on site as an occasional migrant or vagrant and forages in a variety of habitats. The construction of RMDP facilities would be phased over a long period of time, and approximately 1,486 of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek and associated tributaries would be available for individuals of this species occasionally using the Project area at any given time. Therefore, the permanent loss of 245 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,116 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 55.1% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat for nesting habitat and **Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat for foraging habitat). After build-out of the Project area, 1,486 acres of suitable habitat for this species would remain in the Project area.

Because the yellow-headed blackbird is a wide-ranging species that occurs on site as an occasional migrant or vagrant and 1,486 acres of suitable foraging habitat would remain after build-out, this permanent loss of habitat that would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,361 acres (59.4%). Because the yellow-headed blackbird is a wide-ranging species that occurs on site as an occasional migrant or vagrant and approximately 1,486 acres of suitable habitat would remain after build-out, the permanent loss of habitat from the combined direct and indirect permanent impacts of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The yellow-headed blackbird is a mobile species that occasionally occurs on site as an occasional migrant or vagrant. It is highly unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality of individual adult birds. Some foraging or resting individuals may be displaced or disturbed by construction activities, but there would be adequate alternative habitat elsewhere in the Project area for these individuals. The yellow-headed blackbird is not expected to breed on site so nests with eggs or young would not be affected. Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The yellow-headed blackbird is a mobile species and it is highly unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in injury or mortality of individual adult birds. Some foraging or resting individuals may be displaced or disturbed by construction activities, but there would be adequate alternative habitat elsewhere in the Project area for these individuals. The yellow-headed blackbird is not expected to breed on site so nests with eggs or young would not be affected. Indirect permanent impacts would be adverse but not significant.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. These effects may disturb yellow-headed blackbirds that use the site for foraging, causing them to avoid or leave areas near construction.

Potential long-term secondary impacts associated with urban development include traffic noise; nighttime illumination; invasion of suitable habitat by exotic species; increased litter; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in yellow-headed blackbirds avoiding or leaving areas subject to these effects and there is some potential for predation of individuals.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, and thus impacts to suitable habitat for the yellow-headed blackbird, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained, and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

Because the yellow-headed blackbird is a wide-ranging species that occasionally uses habitat in the Project area for foraging, these short-term and long-term secondary impacts would only affect occasional migrants or vagrants. These impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the yellow-headed blackbird (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat for nesting habitat and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat for foraging habitat):

- Alternative 3 – 224 acres (4.0%) of permanent loss and 179 acres of temporary loss;
- Alternative 4 – 207 acres (3.7%) of permanent loss and 183 acres of temporary loss;
- Alternative 5 – 260 acres (4.6%) of permanent loss and 169 acres of temporary loss;
- Alternative 6 – 261 acres (4.6%) of permanent loss and 176 acres of temporary loss; and
- Alternative 7 – 118 acres (2.1%) of permanent loss and 475 acres of temporary loss.

Compared to Alternative 2, which would result in 245 acres (4.3%) of permanent habitat loss and 136 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat reduced, Alternatives 5 and 6 would be somewhat higher, and Alternative 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat higher and Alternative 7 would be substantially higher. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the yellow-headed blackbird is a wide-ranging species and is expected to occasionally use the Project area for foraging, and because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be somewhat higher and lower, and substantially reduced under Alternative 7 compared to Alternative 2, permanent loss of habitat would not be substantially adverse. Temporary impacts under Alternatives 3 through 7 would be somewhat to substantially higher, but because of their temporary nature also would not be substantially adverse.

Permanent and temporary loss of habitat under Alternatives 3 through 7 therefore would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the yellow-headed blackbird (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat for nesting habitat and **Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat for foraging habitat):

- Alternative 3 – 2,985 acres (52.8%) of permanent loss;
- Alternative 4 – 2,838 acres (50.2%) of permanent loss;
- Alternative 5 – 2,780 acres (49.2%) of permanent loss;
- Alternative 6 – 2,556 acres (45.2%) of permanent loss; and
- Alternative 7 – 2,093 acres (37.0%) of permanent loss.

Compared to Alternative 2, which would result in 3,361 acres (59.4%) of permanent loss of habitat, Alternatives 3 through 6 would have reduced impacts. Alternatives 4 through 7 would have substantially reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions under Alternatives 4 through 7 due to reduced Project footprints, and Alternative 7 would be further substantially reduced compared to the other alternatives because large agricultural areas along the Santa Clara River associated with Landmark Village and Homestead East (the Onion Fields) would not be developed.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the yellow-headed blackbird:

- Alternative 3 – 3,209 acres (56.7%) of permanent loss;
- Alternative 4 – 3,044 acres (53.8%) of permanent loss;

- Alternative 5 – 3,040 acres (53.8%) of permanent loss;
- Alternative 6 – 2,817 acres (49.8%) of permanent loss; and
- Alternative 7 – 2,211 acres (39.1%) of permanent loss.

Compared to Alternative 2, which would result in 3,361 acres (59.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons cited above for indirect permanent impacts. Because the combined direct and indirect permanent loss of suitable habitat for the yellow-headed blackbird occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to yellow-headed blackbird individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Adult birds would likely avoid impacts during construction activities by avoiding or leaving construction areas. It is unlikely that adults would be injured or killed, but foraging and resting may be disrupted by construction activities. Because the species does not nest on site, nests with eggs and young would not be affected. Combined direct and indirect permanent impacts (Impacts to Individuals) would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; exotic plant species; litter; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2.

Because the yellow-headed blackbird is a wide-ranging species and only occasionally occurs on site to forage, these potential short-term and long-term secondary effects would not have a substantial adverse effect on the species and contribute to the reduction of its range and

distribution. These long-term and short-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the yellow-headed blackbird because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 1,418 acres of suitable foraging habitat in the River Corridor SMA, Salt Creek area, and High Country SMA. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides, will also be mitigated through a variety of measures.

YELLOW WARBLER (NESTING) (CSC)

Life History

The yellow warbler (*Dendroica petechia brewsteri*) is widely distributed, with a breeding range from northern Alaska eastward to Newfoundland and southward to northern Baja California and Georgia. This species is a migrant throughout much of North America and winters from southern California, Arizona, and the Gulf Coast southward to central South America (AOU 1998). Zeiner *et al.* (1990A) describes its distribution, abundance, and seasonality in California as an uncommon to common summer resident in the north and as a locally common resident in the south. It breeds in riparian woodlands southward from the northern border of the state, generally west of the Sierra Nevada to the coastal slopes of southern California, and from coastal and desert lowlands up to 2,700 meters (8,860 feet) AMSL in the Sierra Nevada and other montane chaparral and forest habitats (Lowther *et al.* 1999; Grinnell and Miller 1944). The yellow warbler primarily winters from northern Mexico to South America (mostly east of the Andes) to the Amazon lowlands of northern Bolivia and Amazonian Brazil, including most insular areas within this range, and to central Peru. Winter populations occur in lesser numbers in California, southwestern Arizona, southern Florida, and the Greater Antilles (Lowther *et al.* 1999). Small numbers regularly overwinter in southern California lowlands (Garrett and Dunn 1981). It is also a common migrant on the Channel Islands and Farallon Islands in spring and fall (DeSante and Ainley 1980; Garrett and Dunn 1981).

The yellow warbler usually nests in wet, deciduous thickets, especially those dominated by willows (*Salix* spp.), and in disturbed and early successional habitats (Lowther *et al.* 1999). In southern California, it nests in lowland and foothill riparian woodlands dominated by cottonwoods (*Populus* spp.), alders (*Alnus* spp.), or willows and other small trees and shrubs typical of low, open-canopy riparian woodland (Garrett and Dunn 1981). Nest trees most often are willows, hawthorns (*Crataegus* spp.), raspberry (*Rubus* spp.), northern white cedar (*Thuja occidentalis)*, honeysuckle (*Lonicera* spp.), and Spiraea (*Spiraea* spp.) (Lowther *et al.* 1999). It also nests in montane chaparral, open ponderosa pine and mixed conifer habitats with substantial amounts of brush (Zeiner *et al.* 1990A), but nesting in these habitats is perhaps relatively recent (Gaines 1977). Nests are usually located at intermediate heights (six to eight feet above the ground) and shrub density in an upright fork or crotch of a large tree, or sometimes a sapling or bush. Territories are established as soon as the males arrive in the spring (Lowther *et al.* 1999). Territories and home ranges are small, varying from 0.03 to 0.2 hectare (0.08 to 0.5 acre) (Lowther *et al.* 1999). Peak densities measured in southeast Arizona reached 48 birds per hectare (Lowther *et al.* 1999).

During migration, yellow warblers occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous–coniferous woodlands,

shrublands, forests, suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994).

The yellow warbler forages for insects and spiders in the upper canopy of deciduous trees and shrubs, and occasionally hawks insects from the air or eats berries (Bent 1953; Ehrlich *et al.* 1988). Foraging typically occurs between 0.3 and 16.8 meters (1 to 55 feet) above the ground at the top of vegetation.

While no large-scale rangewide changes have been documented for the yellow warbler, populations in the southwestern United States have declined dramatically in recent decades in many lowland areas (*e.g.*, southern coast, Colorado River, San Joaquin and Sacramento valleys) (Lowther *et al.* 1999). Yellow warbler is now rare to uncommon in many lowland areas where formerly it was common (McCaskie *et al.* 1979; Garrett and Dunn 1981). Major continuing threats to the species include habitat destruction and fragmentation, and nest parasitism by brown-headed cowbirds (Garrett and Dunn 1981). Habitat fragmentation, especially when caused by intense grazing where willow growth along riparian habitats is reduced or removed, has had a major impact on populations in the western United States (Taylor and Littlefield 1986). Populations along the stretch of the Salinas River in Monterey County declined 50% in the 1980s, attributed to loss of riparian habitat and an increase of brown-headed cowbirds (Lowther *et al.* 1999). Management of cattle grazing in the western United States to maintain willow borders of riparian habitats helped to maintain yellow warbler populations (Taylor and Littlefield 1986). In southeastern Arizona, the yellow warbler population density increased six-fold within two to three years after the cessation of livestock grazing in riparian habitat (Lowther *et al.* 1999). Brood parasitism by brown-headed cowbirds is heavy and apparently has been a major cause of the drastic decline in numbers in lowland localities in recent decades (Lowther *et al.* 1999; Garrett and Dunn 1981; Remsen 1978). For example, parasitism occurred in nine of 25 nests or family groups in the Sierra Nevada where cowbirds were common (Lowther *et al.* 1999; Rothstein *et al.* 1980). Like other riparian bird species, several other potential human- or development-related factors may affect yellow warblers. Construction-related impacts include dust; noise and ground vibration; diminished water quality and altered hydrology; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include invasive plant species such as giant reed and tamarisk, which degrade habitat quality; increased human activity; noise; lighting; diminished water quality and altered hydrology; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants, which are especially attracted to riparian areas and may prey on nestlings.

Survey Results

Surveys for riparian birds have been conducted for multiple years along the Santa Clara River in suitable habitat for the yellow warbler. This species was observed within the Specific Plan area during avian surveys from 1992 through 2007 (Guthrie 1992, 1993B, 1994B, 1995B, 1996B, 1997B, 1998A, 1999B, 2000C, 2001B, 2002C, 2003B, 2004H, 2005B, 2006A; Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A; Bloom Biological 2007A); in the VCC planning area from 1988 to 1989 and 1991 to 2006 (Guthrie 1988, 1989, 1991A, 1992, 1993A, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E, 2001A, 2002A, 2003A, 2004F, 2005A, 2006C); in the Entrada planning area in 2000 (Guthrie 2000D); and off site in Castaic Junction north of the Entrada planning area (Guthrie 1988, 1989, 1990, 1991A, 1992, 1993A, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E, 2000F, 2001A, 2002A, 2003A, 2004F, 2005A, 2006C; Haglund and Baskin 2000; Dudek and Associates 2006E; Bloom Biological 2007A). The species is considered to be a relatively common breeder in the Project area.

Southern cottonwood–willow riparian, southern coast live oak riparian forest, and southern willow scrub are suitable nesting and foraging habitat for the yellow warbler. There is a total of 445 acres of suitable habitat in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 39 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 8.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 44 acres would be temporarily impacted.

The yellow warbler is still a wide-ranging species that uses a variety of riparian habitats. The construction of RMDP facilities would be phased over a long period of time, and hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated

tributaries would be available for this species at any given time. The permanent loss of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. These permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 7.8 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 1.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

Because the yellow warbler is still a wide-ranging species and uses a variety of riparian associated habitats, the permanent loss of 7.8 acres of habitat that would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 47 acres (10.4%). Because the yellow warbler is still a wide-ranging species, uses a variety of riparian-associated habitat, and because the construction activities would be phased over a long period of time, hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. Therefore, the permanent loss of 47 acres of habitat that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction. These impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of

the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The yellow warbler is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in the direct loss of individual adult birds. However, implementation of the RMDP could result in injury or mortality of yellow warblers due to destruction of nests and loss of young if such construction/grading activities occurred during the nesting season. In addition, construction activities could alter the yellow warbler's foraging behavior, potentially affecting the health of young and reducing survivorship and reproductive success. Implementation of the SCP would not directly impact this species. Construction/grading activities, such as vegetation clearing, occurring during the nesting season could result in destruction of nests and resulting loss of eggs and/or young or alteration of foraging behavior (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. Because the species has potential to nest on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could result in loss of young or eggs of this species as a result of destruction of nests (from any construction/grading activities that occur during the nesting season) or alteration of foraging behavior. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. These impacts could alter essential behaviors such as foraging and breeding, induce physiological stress, and increase predation rates. Fugitive dust and diminished water quality and altered hydrology (*e.g.*, runoff, erosion, sedimentation) could reduce habitat quality, including insect prey. Although construction would be short term in nature, if these activities occurred during the

breeding season they could have a substantial direct adverse effect on this species due to potential disruption of breeding and nesting activities.

Potential long-term secondary impacts associated with urban development include traffic noise (similar to the noise effects discussed in detail above for least Bell's vireo); nighttime illumination; invasion by exotic species such as giant reed and tamarisk and Argentine ants which are attracted to riparian areas and may prey on nestlings; increased litter; cowbird nest parasitism; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term.

Altered hydrology and geomorphology in the Santa Clara River corridor as a result of urban development in the watershed, and thus impacts to nesting habitat for the yellow warbler, are also potential long-term secondary effects of the build-out of the Specific Plan, VCC, and Entrada planning areas. However, the Flood Hydraulics Impacts Assessment (PACE 2009) found that there would be no significant impacts to water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the Project area as a result of the proposed Project improvements. These hydrologic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the Project area and downstream into Ventura County over the long term. The technical analysis further determined that the River would still retain sufficient width to allow natural fluvial processes to continue. As a result, the mosaic of habitats in the River that support various special-status species would be maintained and the population of the species within and immediately adjacent to the River corridor would not be significantly affected.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The trail and viewing platforms will be used by the public during daytime hours. There is a potential for secondary impacts to yellow warbler nesting in areas that are adjacent to the trail and viewing platforms. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is the potential for increased trash along the trail that could enter the River Corridor SMA. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is potential for unauthorized trespass by the public into sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during the nighttime hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Short-term and long-term secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the yellow warbler (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 25 acres (5.6%) of permanent loss and 43 acres of temporary loss;
- Alternative 4 – 26 acres (5.8%) of permanent loss and 41 acres of temporary loss;
- Alternative 5 – 31 acres (7.0%) of permanent loss and 47 acres of temporary loss;
- Alternative 6 – 17 acres (3.9%) of permanent loss and 43 acres of temporary loss; and
- Alternative 7 – 7.9 acres (1.8%) of permanent loss and 24 acres of temporary loss.

Compared to Alternative 2, which would result in 39 acres (8.7%) of permanent habitat loss and 44 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be marginally to somewhat different and Alternative 7 would be substantially reduced. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be substantially reduced compared to Alternative 2, and temporary impacts would range from similar in magnitude to substantially reduced, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the yellow warbler (**Figures 4.5-55** through **4.5-59,** Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 6.9 acres (1.6%) of permanent loss;
- Alternative 4 – 3.5 acres (0.8%) of permanent loss;
- Alternative 5 – 2.6 acres (0.6%) of permanent loss;
- Alternative 6 – 1.3 acres (0.3%) of permanent loss; and
- Alternative 7 – 0.7 acre (0.1%) of permanent loss.

Compared to Alternative 2, which would result in 7.8 acres (1.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 3 and 4 would have marginally to somewhat reduced impacts compared to Alternatives 5, 6, and 7, which would have additional reductions compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the yellow warbler:

- Alternative 3 – 32 acres (7.2%) of permanent loss;
- Alternative 4 – 29 acres (6.5%) of permanent loss;
- Alternative 5 – 34 acres (7.5%) of permanent loss;
- Alternative 6 – 19 acres (4.2%) of permanent loss; and
- Alternative 7 – 8.5 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (10.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next

largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for the yellow warbler occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to yellow warbler individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would essentially be the same as for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The yellow warbler is known to nest on site. Construction/grading activities, such as vegetation clearing, conducted during the breeding season could result in destruction of nests and loss of eggs and/or young where the species is nesting, and foraging behavior could be altered such that the health of young and survivorship and overall reproductive success would be reduced. Permanent impacts (Impacts to Individuals) would be significant, absent mitigation under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Potential short-term impacts include construction-related dust, noise, ground vibration, nighttime illumination, diminished water quality and altered hydrology. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include traffic noise; nighttime illumination; diminished water quality; exotic plant and animal species; litter; cowbird nest parasitism; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and mesopredators, as described above for Alternative 2. All of these impacts occurring under Alternatives 3 through 7 could result in lower reproductive success of the yellow warbler in the Project area.

Riparian habitat along the Santa Clara River would not be substantially affected over the long term by altered hydrology or geomorphology under Alternatives 3 through 7 (PACE 2009).

There would be no viewing platforms constructed in the River Corridor SMA under Alternatives 3 through 7.

These potential short-term and long-term secondary effects would have a substantial adverse effect on the species and would contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to yellow warbler: (1) impacts to individuals; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint. Direct and indirect impacts to habitat were determined to be adverse but not significant.

Nesting by yellow warbler has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

With regard to secondary effects, nesting and foraging activities by the yellow warbler could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, lighting, and diminished water quality and altered hydrology. These secondary effects may alter foraging and nest defense behavior, cause adults to abandon nests due to stress, and otherwise disrupt normal behavioral patterns, and cause nests to be more vulnerable to predators. Short-term effects of dust and diminished water quality and altered hydrology may affect habitat quality and the insect prey base for the yellow warbler, thus adversely affecting foraging behavior and provisioning of young. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented that will reduce impacts to yellow warbler. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include habitat fragmentation; increased traffic noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative

2 only); invasive species such as giant reed and tamarisk and Argentine ants, which may prey on nestlings; cowbird parasitism; increased noise; diminished water quality, affecting prey and nesting habitat quality; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 314 acres of suitable habitat, primarily in the River Corridor SMA, but also in the High Country SMA and Salt Creek area, will provide yellow warblers with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect yellow warblers by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Cowbird surveys will be conducted and trapping will be implemented if necessary. Controls on Argentine ants will help reduce impacts on young in nests.

The specific mitigation measures for the yellow warbler are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-78 IMPACTS TO INDIVIDUALS – YELLOW WARBLER (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of yellow warbler individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to yellow warbler individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to yellow warbler individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-79 SECONDARY IMPACTS – YELLOW WARBLER (NESTING)

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the yellow warbler associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such traffic noise, invasion by exotic plant species, abandonment of nests from human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for yellow warbler that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to avoid and minimize impacts to water quality and hydrology and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor

SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

Additionally, SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA that will preserve and enhance at least 314 acres of suitable habitat for the yellow warbler (**Figure 4.5-12**).

SP-4.6-17 will control public access to the River Corridor SMA and states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect yellow warbler habitat and/or breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to yellow warbler, including short-term construction-related dust, noise, ground vibration, and diminished water quality; and long-term impacts such as invasive species (including exotic plants, cowbirds, and Argentine ants); increased human activity; greater vulnerability to

predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as indirect poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the yellow warbler during construction activities by protecting water quality.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for arroyo toad during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to yellow warbler by protecting habitat quality, including water quality, and by minimizing impacts on its insect prey. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-55 requires that existing maps of suitable riparian habitat for the least Bell's vireo, willow flycatcher/southwestern willow flycatcher, and western yellow-billed cuckoo be updated as needed and submitted to the Corps and CDFG. The removal of any riparian habitat suitable for these species from the Project footprint shall be mitigated through the creation or enhancement of similar riparian habitat at an approved mitigation site or by the removal of exotic species from an area of existing similar habitat. Because the yellow warbler uses the same habitat as these species, it will benefit from this mitigation measure.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to yellow warbler by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the yellow warbler would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

GRASSHOPPER SPARROW (NESTING) (CSC)

Life History

The grasshopper sparrow (*Ammodramus savannarum*) is a neotropical migrant that breeds from eastern Washington eastward to southern Maine, and southward to southern California, northernmost Mexico, and Virginia. It is a breeding resident east of the Rocky Mountains from Canada to the southern states and the wintering ranges south into Florida and Mexico. Grasshopper sparrows winter from California to North Carolina and south through Central America to Costa Rica (County of Riverside 2008). It is a year-round resident in the western states and in the southern portions of the southeastern states (County of Riverside 2008). In southern California, the grasshopper sparrow occurs in appropriate habitats west of the deserts (Garrett and Dunn 1981).

Grasshopper sparrows in California breed (and primarily winter) on slopes and mesas containing grasslands of varying compositions (Grinnell and Miller 1944; Garrett and Dunn 1981). The grasshopper sparrow uses dense, dry, or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting, and requires fairly continuous native grassland areas with occasional taller grasses, forbs, or shrubs for song perches (Garrett and Dunn 1981). Grasshopper sparrows tend to avoid grassland areas with extensive shrub cover and the presence of native grasses is less important than the absence of trees (Smith 1963; County of Riverside 2008). They may also occur in fallow agricultural fields, especially those periodically planted with oats and barley.

Grasshopper sparrows forage for insect prey on the ground and in low foliage within the interstitial bare ground among relatively dense, short to medium height bunchgrass, sometimes scraping in the litter. It feeds primarily on insects in the summer and grass and forb seeds in winter (County of Riverside 2008).

Grasshopper sparrows breed from early April to mid-July, with a peak in May and June. Nests are difficult to detect and are composed of grasses and forbs and are located in slight depressions in the ground or hidden at the base of an overhanging clump of grasses or forbs (Zeiner *et al.* 1990A). Clutch size is four to five eggs that incubate in 11 to 12 days. The chicks fledge about nine days after hatching (Harrison 1978).

Threats to the grasshopper sparrow include habitat loss, degradation, and fragmentation. A decline in population was observed in the mid-1900s because of increased development on open, hillside areas (Garrett and Dunn 1981). Development-related fragmentation of native habitat in southern California has also been shown to contribute to rapid local native species extirpations, particularly passerine birds (Soulé *et al.* 1988; Soulé *et al.* 1992; Crooks *et al.* 2001). Vickery (County of Riverside 2008) suggested that declines in the population were also due to extensive grazing in western North America and brown-headed cowbird nest parasitism. An additional

threat to this species is increased nest failures resulting from nest predation where nests are located in short grasses and weedy edges of wooded habitats associated with habitat fragmentation (County of Riverside 2008). General human presence and domestic animals have fairly obvious potential adverse effects on native habitats and species along the urban–wildland edge. Human activity may result in increased trampling of native vegetation, trash dumping, off-road vehicles, *etc.*, that degrade habitats and harass wildlife. Cats and dogs may prey on native species along the urban–wildland edge and can have a significant impact on local populations (Crooks *et al.* 2001). Several other potential human- or development-related factors may affect grasshopper sparrows. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Additional long-term effects related to development include lighting and Argentine ants, which may occur in moist edge areas and prey on nestlings.

Survey Results

The Project area is just south of the southern edge of the portion of this species' summer breeding range, which occurs at approximately the Los Angeles/Kern County boundary. Therefore, grasshopper sparrows likely use the Project area during migration between breeding areas to the north and southern wintering areas. There is potential for this species to breed in grasslands and some agricultural areas, which occur mostly in the central portion of the Specific Plan area, San Martinez Grande, along portions of the Santa Clara River and Castaic Creek, and some portions of the VCC and Entrada planning areas. Although suitable grassland breeding and wintering habitat for the grasshopper sparrow occurs in the Project area, multiple avian surveys conducted since 1988 have not detected this species. Bird surveys were conducted by Daniel Guthrie from 1988 through 2007 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C). The surveys were focused in riparian areas in the Santa Clara River corridor and on both sides of the River but also included uplands adjacent to the River. Other avian surveys were conducted in portions of the Santa Clara River by Labinger *et al.* and Labinger and Greaves in 1994, 1996, 1997, and 1998 (Labinger *et al.*1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (2007A, 2008).

The presence of the grasshopper sparrow is easily confirmed by its characteristic call, although nests are difficult to find. These surveys generally were conducted during the April to June

breeding seasons, and, if the grasshopper sparrow was a common nesting bird on site, it would have been detected. These surveys therefore are considered adequate to conclude that the grasshopper sparrow does not commonly occur on site, but they do not demonstrate absence from the Project area. This EIS/EIR thus analyzes the potential impact of the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas on this species. California annual grassland and purple needlegrass are suitable breeding and wintering habitat for this species. A total of 2,300 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 24 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.1% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 9.7 acres would be temporarily impacted.

The grasshopper sparrow is still a wide-ranging species, but it was determined to not commonly occur on site (it has not been detected during surveys). The construction of RMDP facilities would be phased over a long period of time, and approximately 660 of acres of grassland habitat in the High Country SMA, Salt Creek area, River Corridor SMA would be available for this species at any given time if it were to occur on site. The permanent loss of 24 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the

species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 1,042 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 45.3% of these habitats on site (**Figure 4.5-66,** Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat).

Although a relatively large amount and percentage of suitable habitat on site for the grasshopper sparrow would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas, this species is considered unlikely to breed or winter on site based on negative survey results over multiple years. This species is wide-ranging and it was determined to not commonly occur on site. If it were to occur, approximately 660 of acres of grassland habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species. This loss of habitat, therefore, would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,067 acres (46.4%). Although a relatively large amount and percentage of suitable habitat on site for the grasshopper sparrow would be permanently lost from the combined direct and indirect permanent impacts of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, this species is considered unlikely to breed or winter on site based on negative survey results over multiple years. This species is wide-ranging and it was determined to not commonly occur on site**.** If it were to occur, approximately 660 of acres of grassland habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species. This loss of habitat, therefore, would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to

eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Based on the negative results from past surveys, the grasshopper sparrow is unlikely to breed in the Project area. Also, because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult grasshopper sparrows. Construction activities, however, could disrupt foraging by wintering birds by displacing them from construction areas. Implementation of the SCP would not directly impact this species. If the species occasionally attempted to nest on site, vegetation clearing or grading activities occurring during the nesting season could result in destruction of nests and eggs and injury or mortality of young, and/or disrupt foraging and provisioning of young (significance criteria 1 and 4). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals, but over a much larger area. Although wintering adults would not be injured or killed, foraging could be disrupted. If the species attempted to nest on site, vegetation clearing and grading activities occurring during the nesting season could result in destruction of nests and eggs, injury or mortality of young, and/or disruption of foraging and provisioning of young (significance criteria 1 and 4). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to impact grasshopper sparrows in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, nighttime illumination, and increased human activity. These impacts could affect both wintering birds foraging on site and nesting birds, if nesting were to occur on site. Construction activities associated with RMDP implementation and build-out of the Specific Plan, VCC, and Entrada planning areas, however, would be short term and because of the low potential for grasshopper sparrow to occur on site, these impacts would not have a substantial adverse effect on this species.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include habitat fragmentation; abandonment of nests from human activity; greater vulnerability to nocturnal predators as a result of nighttime lighting; noise from roadways; nest parasitism by cowbirds; greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators; and loss of prey or secondary poisoning due to the use of pesticides. Although these effects could occur, because the grasshopper sparrow is unlikely to nest or winter on site in large numbers, these impacts would not have a substantial adverse effect on the species.

These potential short-term and long-term secondary impacts would not have a substantial adverse effect on the species and would not contribute to the reduction of the range and/or distribution of this species (significance criteria 1 and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the grasshopper sparrow (**Figures 4.5-67** through **4.5-71,** Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 32 acres (1.4%) of permanent loss and 14 acres of temporary loss;
- Alternative 4 – 24 acres (1.1%) of permanent loss and 10 acres of temporary loss;
- Alternative 5 – 42 acres (1.8%) of permanent loss and 16 acres of temporary loss;
- Alternative 6 – 66 acres (2.8%) of permanent loss and 18 acres of temporary loss; and
- Alternative 7 – 19 acres (0.8%) of permanent loss and 55 acres of temporary loss.

Compared to Alternative 2, which would result in 24 acres (1.1%) of permanent habitat loss and 9.7 acres of temporary impacts, the permanent loss of habitat under Alternatives 3, 4, and 5 would be not substantially different to somewhat more; Alternative 6 would be substantially more, and Alternative 7 would be somewhat less. Compared to Alternative 2, the temporary loss of habitat under Alternative 4 would be not substantially different; Alternatives 3, 5, and 6 would be marginally to somewhat more; and Alternative 7 would be substantially more. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would not be substantially different than Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the grasshopper sparrow (**Figures 4.5-67** through **4.5-71,** Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 966 acres (42.0%) of permanent loss;
- Alternative 4 – 911 acres (39.6%) of permanent loss;
- Alternative 5 – 880 acres (38.3%) of permanent loss;
- Alternative 6 – 846 acres (36.8%) of permanent loss; and
- Alternative 7 – 722 acres (31.4%) of permanent loss.

Compared to Alternative 2, which would result in 1,042 acres (45.3%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the grasshopper sparrow:

- Alternative 3 – 998 acres (43.4%) of permanent loss;
- Alternative 4 – 935 acres (40.6%) of permanent loss;
- Alternative 5 – 922 acres (40.1%) of permanent loss;
- Alternative 6 – 911 acres (39.6%) of permanent loss; and

- Alternative 7 – 741 acres (32.2%) of permanent loss.

Compared to Alternative 2, which would result in 1,067 acres (46.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect permanent impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be successive reductions in the Specific Plan and Entrada planning areas under these alternatives. Because the combined direct and indirect permanent loss of suitable habitat for the grasshopper sparrow occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to grasshopper sparrow individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Wintering birds foraging on site could be displaced by construction activities. Although the grasshopper sparrow has a low potential to breed or nest on site, if it attempted to nest on site, impacts to individual grasshopper sparrows, including destruction of nests and eggs, injury or mortality of young, or disruption of foraging and provisioning of young, occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than implementation of the RMDP and the SCP because of the much larger area of impact.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas, include increased human activity, highway noise, increased predation, and use of pesticides, as described above for Alternative 2.

Because the grasshopper sparrow has a low potential to breed or winter on site, these potential short-term and long-term secondary impacts would not have a substantial adverse effect on the species or contribute to the reduction of its range and distribution. These secondary impacts would be adverse but not significant.

Mitigation Strategy and Summary

The Project could result in significant impacts to the grasshopper sparrow as a result of impacts to individuals.

Wintering and nesting by the grasshopper sparrow has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, for the purpose of this analysis, it is assumed that grasshopper sparrows could both winter and nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, both wintering and nesting individuals could be displaced from suitable habitat by construction activities. Although impacts to winter visitors foraging on site would not be significant because substantial alternative habitat would be available, impacts to nesting individuals would be significant if vegetation clearing and grading activities resulted in the destruction of nests and eggs, injury or mortality of young, or disruption of foraging and provisioning of young. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

Loss of suitable habitat and secondary impacts to individuals would be adverse but not significant and no mitigation is required for these impacts. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts due to habitat loss and secondary effects to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 659 acres of grassland habitat in the Salt Creek area, High Country SMA, and River Corridor SMA. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction, because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides; will also be mitigated through a variety of measures.

IMPACT 4.5-80 IMPACTS TO INDIVIDUALS – GRASSHOPPER SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of grasshopper sparrow individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to grasshopper sparrow individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to grasshopper sparrow individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

PALLID BAT (CSC)

Life History

The pallid bat (*Antrozous pallidus*) is widespread throughout the western United States; southern British Columbia, Canada; and mainland and Baja California, Mexico (Hermanson and O'Shea 1983; Hall 1981). Within the United States, it ranges east into southern Nebraska, western Oklahoma, and western Texas. In California, the CNDDB (CDFG 2007A) contains 378 records for this species. The pallid bat occurs throughout California, except for the highest elevations of the Sierra Nevada. A large number of the records are from southern California counties, including Los Angeles (14 records), San Bernardino (24 records), San Diego (26 records), Riverside (14 records), Orange (three records), and Ventura (four records).

The pallid bat is locally common in arid deserts (especially the Sonoran life zone) and grasslands throughout the western United States and also occurs in shrublands, woodlands, and forests at elevations up to 2,440 meters (8,000 feet) (Hermanson and O'Shea 1983; Hall 1981). Although this species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, it has been observed far from such areas (Hermanson and O'Shea 1983).

Pallid bat day roosts of single- or mixed-sex colonies, often including greater than 20 individuals and sometimes more than 200 individuals, usually are established in crevices or man-made structures, with colonies (Hermanson and O'Shea 1983). The selection of crevices may vary seasonally in relation to "adaptive hypothermia" in the species.

Pallid bats forage for a variety of insects, including flightless arthropods picked up from the ground (*e.g.*, scorpions and ground crickets), insects gleaned from vegetation (*e.g.*, cicadas), insects taken in flight, and small vertebrates such as horned lizards and pocket mice that are taken on the ground. Although the species is capable of flying more than 18 miles, most foraging occurs within about two miles of the diurnal roost (Hermanson and O'Shea 1983). They probably are not "migratory" in the sense of moving long distances between summer and winter roosts, but they appear to move to different roosting areas in the cooler months. They probably hibernate in the winter, but some winter activity has been observed (Hermanson and O'Shea 1983).

Pallid bats typically give birth from May through June in the southwestern United States. The young are born relatively undeveloped, but they mature rapidly and achieve full adult flight capability by about 49 days of age and full adult weight by 56 days of age (Hermanson and O'Shea 1983).

Bats in general are very sensitive to human disturbance of roost sites, including exploration of caves, mines and old buildings, vandalism, collection at roost sites and watering sites, and extermination. Even a small amount of activity can cause bats to permanently abandon roost

sites, particularly day roosts that may be used as maternity sites during the breeding season and winter roosts that are used during hibernation and torpid periods. The pallid bat is particularly vulnerable to terrestrial predators and collection by humans while pallid bat individuals are on the ground taking prey (Hermanson and O'Shea 1983). Plausible impacts to pallid bat resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites; roost site and foraging habitat degradation, such as trampling and invasive species; and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered throughout the Project area, as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The results of these surveys demonstrate that the pallid bat is present and has both day and nocturnal roosts in the Project area. There is at least one maternity colony in a metal storage building in middle Potrero Canyon, and a nocturnal roost in a wooden shed was documented along Potrero Creek. Because of the general foraging behavior of this species and its ability to forage several miles from roost sites, it is assumed that most natural habitats within the Project area provide potential foraging habitat. Suitable foraging (shrublands and grasslands) or roosting habitat (woodlands) for the pallid bat includes alluvial scrub, arrow weed scrub, southern cottonwood–willow riparian forest, Mexican elderberry scrub, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, mixed oak woodland, and California walnut woodland. A total of 10,919 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of

Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total 173 acres of suitable foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.6% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats shows impacts to all vegetation communities because the pallid bat is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 75 acres would be temporarily impacted. In addition, a documented nocturnal roost site in a wooden shed in Potrero Creek would be removed.

The pallid bat forages in a broad variety of habitats that comprise more than 10,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 173 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). However, the loss of the nocturnal roost site along Potrero Creek would have a substantial direct adverse effect on this species and would affect the pattern of its movement and habitat use on site (significance criteria 1 and 4). Direct permanent and temporary impacts (Loss of Habitat) are therefore significant, absent mitigation.

Indirect Permanent Impacts

Approximately 3,123 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 28.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitat for the pallid bat would be permanently removed as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 28.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,296 acres (30.2%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the pallid bat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Pallid bats are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be injured or killed. Furthermore, even if young escaped direct impacts, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in mortality of the young due to their likely inability to safely relocate to another roost site. The documented 2006 maternity site in the storage building in Potrero Canyon is located approximately 300 feet north of the RMDP construction zone and would not be directly impacted during construction activities; thus, there would not be direct impacts to pallid bats using this maternity site. However, because of the pallid bat's presence in the Project area, there is the potential for maternity sites to be established elsewhere, and those sites could be directly impacted by construction activities. Implementation of the SCP would not directly impact this species. A nocturnal roost in the wooden shed along Potrero Creek would be removed, but direct impacts to pallid bats at this site are not anticipated. However, if a day roost site were established elsewhere prior to construction activities in the Project footprint, direct impacts to the

roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of the maternity site in the storage building north of Potrero Canyon. If construction occurred while the site was occupied, impacts to both adults and young would occur because of their likely disorientation from being flushed from the roost and their likely inability to safely relocate to another day roost. Although other day roosts, including maternity sites, were not documented in the 2004 and 2006 surveys (Impact Sciences 2005; Johnson 2006), any day roost sites established in construction zones could also result in impacts to pallid bat individuals.

The loss of the maternity site in Potrero Canyon would have a substantial adverse effect on a special-status species (significance criterion 1). Furthermore, if a day roost site were established elsewhere in the Project area prior to construction activities, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). Because of the loss of a documented maternity site, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect pallid bats in areas adjacent to construction zones. As noted above, increased human activity, noise, and dust associated with construction activities could cause pallid bats to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

A maternity site in a storage building is located approximately 300 feet north of the proposed road in Potrero Canyon. Although this site would be permanently lost due to construction of Potrero Village, prior to build-out, it also could be disturbed as a result of construction of RMDP facilities in Potrero Canyon. No other maternity sites were detected during focused surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). The documented maternity site and any other day roosts (including maternity sites) that become established in proximity to construction

zones therefore could be temporarily or permanently impacted as a result of short-term construction activities.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Furthermore, pallid bats taking prey on the ground are vulnerable to collection by humans and to predation by pet, stray, and feral cats and dogs. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the pallid bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 158 acres (1.4%) of permanent loss and 85 acres of temporary loss;
- Alternative 4 – 153 acres (1.4%) of permanent loss and 74 acres of temporary loss;
- Alternative 5 – 185 acres (1.7%) of permanent loss and 91 acres of temporary loss;
- Alternative 6 – 187 acres (1.7%) of permanent loss and 91 acres of temporary loss; and
- Alternative 7 – 77 acres (0.7%) of permanent loss and 152 acres of temporary loss.

Compared to Alternative 2, which would result in 173 acres (1.6%) of permanent loss and 75 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternative 3 would not be substantially different, Alternatives 4 and 7 would be marginally smaller, and Alternatives 5 and 6 would be marginally greater. The relatively greater reduction in permanent loss of habitat and increase in temporary impacts for Alternative 7 compared to Alternative 2 is primarily due to the pullback of

RMDP facilities from the Santa Clara River and its tributaries under Alternative 7; however, the larger amount of temporary impacts under Alternative 7 is offset by the substantial reduction in permanent impacts.

The overall loss of foraging habitat from implementation of the RMDP and the SCP under Alternative 3 through 7 would be similar in magnitude compared to Alternative 2. As described above, the loss of habitat alone under Alternative 2 would not be a substantial adverse impact, but the associated loss of the maternity site in Potrero Canyon results in a finding for Alternative 2 of significant, absent mitigation. The maternity site would also be lost under Alternatives 3 through 7; therefore, this impact (Loss of Habitat) for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the pallid bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,919 acres (26.7%) of permanent loss;
- Alternative 4 – 2,808 acres (25.7%) of permanent loss;
- Alternative 5 – 2,728 acres (25.0%) of permanent loss;
- Alternative 6 – 2,415 acres (22.1%) of permanent loss; and
- Alternative 7 – 2,122 acres (19.4%) of permanent loss.

Compared to Alternative 2, which would result in 3,123 acres (28.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that reduce impacts to pallid bat suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the pallid bat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the pallid bat:

- Alternative 3 – 3,077 acres (28.2%) of permanent loss;
- Alternative 4 – 2,961 acres (27.1%) of permanent loss;
- Alternative 5 – 2,914 acres (26.7%) of permanent loss;
- Alternative 6 – 2,602 acres (23.8%) of permanent loss; and
- Alternative 7 – 2,199 acres (20.1%) of permanent loss.

Compared to Alternative 2, which would result in 3,296 acres (30.2%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussion of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the development footprint in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the pallid bat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual pallid bats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The impacts to individual pallid bats occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada

planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on road and bridges); lighting; pesticides; and pet, stray, and feral cats and dogs. The loss or degradation of suitable habitat and impacts to individual pallid bats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to pallid bat: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals and roosting sites and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon roost sites with a single disturbance event. If individuals, including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat result from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,199 acres (20.1%) under Alternative 7 to 3,296 acres (30.2%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the pallid bat in the Project area. A maternity roost would also be lost due to development in Potrero Canyon, and other day roosts may be present in development areas in the future. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the pallid bat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 5,819 acres of suitable foraging habitat, as well as potential roosting sites, for the pallid bat. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the pallid bat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-81 IMPACTS TO INDIVIDUALS – PALLID BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to pallid bat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to pallid bat individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to pallid bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-82 LOSS OF HABITAT – PALLID BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the pallid bat. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the pallid bat and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the pallid bat. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the pallid bat.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the pallid bat because insect diversity and abundance, as well as small vertebrates would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. These measures will help enhance foraging habitat quality for the pallid bat and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the pallid bat that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for pallid bat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-83 SECONDARY IMPACTS – PALLID BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Potential long-term effects of development include increased lighting; human activity; pet, stray, and feral cats and dogs that may prey on foraging pallid bats and disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect pallid bat roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61,

BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to pallid bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

POCKETED FREE-TAILED BAT (CSC)

Life History

The pocketed free-tailed bat (*Nyctinomops femorosaccus*) is widespread and fairly common in the deserts of the southwestern United States; Baja California, Mexico; and mainland Mexico (Hall 1981). In the United States, it occurs in southern California, central Arizona, southern Mexico, and western Texas (Hall 1981). Although common throughout much of its range, it is considered rare in California (Zeiner *et al.* 1990B). In California, the CNDDB (CDFG 2007A) contains 46 records for this species, including San Diego County (27 records), Riverside County (nine records), Imperial County (five records), Los Angeles County (three records), and Orange and San Bernardino counties (one record each).

The pocketed free-tailed bat primarily occurs in desert habitats but may forage over most available habitats where it occurs (Kumirai and Jones 1990). It occurs at elevations from sea level to 2,500 meters (7,380 feet). Day roosts usually are in crevices in rocky outcrops, steep slopes, and rugged cliffs that are relatively inaccessible to humans (Kumirai and Jones 1990), but the pocketed free-tailed bat also may roost in buildings and under roof tiles (NatureServe 2007).

The pocketed free-tailed bat is probably a moth specialist (Zeiner *et al.* 1990B), but it also forages for a variety of other insects, including true bugs, beetles, ants, wasps, bees, true flies, gnats, midges, and mosquitoes.

Pocketed free-tailed bats form small colonies in day roosts up to about 100 individuals, in crevices in canyons and cliffs and sometimes in man-made structures (Kumirai and Jones 1990; Wilson and Ruff 1999). Births occur in late June and July, and young have been observed flying by August. This species is a yearlong resident of California, and there is no evidence of migration (Zeiner *et al.* 1990B).

No documented threats to pocketed free-tailed bat colonies have been reported in the scientific literature (*e.g.*, Kumirai and Jones 1990) and, because this species uses relatively inaccessible areas for day roosts (crevices in rocky outcrops, steep slopes, and rugged cliffs), most of its colonies probably are not directly threatened. However, like most bats, this species is likely very sensitive to human disturbance and, because it may also roost in man-made structures, it is vulnerable to vandalism, extermination, or inadvertent disturbance of roost sites. Other plausible threats to pocketed free-tailed bats resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites; roost site and foraging habitat degradation, such as trampling and invasive species; and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered through the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The pocketed free-tailed bat was acoustically detected in 2006 in lower Potrero Creek (Johnson 2006). This species was not detected in Anabat surveys in 2004 (Impact Sciences 2005). The Project area is at the extreme northwestern part of pocketed free-tailed bat range in California and does not contain the desert habitats typically used by this species. Though present on site, the species is likely rare. Where it occurs, it probably uses all available habitats supporting prey. Foraging habitat for the pocketed free-tailed bat includes alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, mixed oak woodland, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats shows impacts to all vegetation communities because the pocketed free-tailed bat is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The pocket free-tailed bat forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitats for the pocketed free-tailed bat would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the pocketed free-tailed bat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Pocketed free-tailed bats are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct impacts, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect pocketed free-tailed bats in areas adjacent to construction zones. There is no evidence of existing pocketed free-tailed bat day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause pocketed free-tailed bats to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the pocketed free-tailed bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;

- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;
- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined direct permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different than Alternative 2, Alternative 4 would be marginally less and Alternative 6 marginally greater, Alternative 5 would be somewhat greater, and Alternative 7 would be somewhat less. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternative 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the pocketed free-tailed bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be

constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that reduce impacts to pocketed free-tailed bat suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the pocketed free-tailed bat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the pocketed free-tailed bat:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the pocketed free-tailed bat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual pocketed free-tailed bats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to the potential for loss under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The impacts to individual pocketed free-tailed bats occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and the impacts to individual pocketed free-tailed bats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to pocketed free-tailed bat: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals, roosting sites, and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon roost sites with a single disturbance event. If individuals, including adults and young, are flushed from a day roost during construction they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the pocketed free-tailed bat in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the pocketed free-tailed bat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the pocketed free-tailed bat. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined to be necessary. Potential long-term effects of development include lighting increased human activity and pet, stray, and feral cats and dogs, which may cause roost abandonment, and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the pocketed free-tailed bat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-84 IMPACTS TO INDIVIDUALS – POCKETED FREE-TAILED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate the impacts to pocketed free-tailed bat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to pocketed free-tailed bat individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts Individuals After Mitigation

After mitigation, impacts pocketed free-tailed bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-85 LOSS OF HABITAT – POCKETED FREE-TAILED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the pocketed free-tailed bat. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the pocketed free-tailed bat and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the pocketed free-tailed bat. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the pocketed free-tailed bat.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the pocketed free-tailed bat because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the pocketed free-tailed bat and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the pocketed free-tailed bat that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for pocketed free-tailed bat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-86 SECONDARY IMPACTS – POCKETED FREE-TAILED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of pocketed free-tailed bat. Potential long-term effects of development include increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect pocketed free-tailed bat roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to pocketed free-tailed bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

TOWNSEND'S BIG-EARED BAT (CSC)

Life History

The Townsend's big-eared bat (*Corynorhinus townsendii*) (big-eared bat) ranges throughout the western United States, British Columbia, Canada, and Mexico (Kunz and Martin 1982). In the United States, it occurs in a continuous distribution in all the western states and east into western South Dakota, northwestern Nebraska, southwestern Kansas, western Oklahoma, and western Texas (Kunz and Martin 1982). It also is known from isolated gypsum caves in northeast Texas, Oklahoma, and Kansas and from limestone areas in Arkansas, Missouri, Oklahoma, Kentucky, Virginia, and West Virginia (Kunz and Martin 1982). These relict populations are thought to reflect post-pleistocene climates (Kunz and Martin 1982). In California, the CNDDB (CDFG 2007A) contains 212 records for this species, of which 52 are from four counties in southern California: San Bernardino (33 records), San Diego (10 records), Riverside (five records) and Imperial (four records). There are no records for Los Angeles, Orange, or Ventura counties.

The big-eared bat is primarily associated with mesic habitats characterized by coniferous and deciduous forests, although it also occurs in xeric areas (Kunz and Martin 1982). In California, this species was historically associated with limestone caves and lava tubes located in coastal lowlands, agricultural valleys, and hillsides with mixed vegetation; it occurs in all parts of California, with the exception of alpine and subalpine areas of the Sierra Nevada (Zeiner *et al*. 1990B). The species also occurs in man-made structures and tunnels (Kunz and Martin 1982), and it has been suggested that the big-eared bat has become more common in the western United States due to the availability of man-made structures (Kunz and Martin 1982).

Big-eared bats are relatively sedentary and are not known to disperse or migrate large distances. The longest recorded movement of a big-eared bat in California is 20 miles (Kunz and Martin 1982). Females show high maternity roost fidelity (Kunz and Martin 1982). Maternity roosts are established in the warm parts of caves, mines, and buildings, with one or more clusters of females numbering up to about 100 individuals. Summer roosts of males are solitary. Young are born from late spring to early summer and are fully weaned by 42 days of age. First flight occurs by about 18 to 21 days.

Big-eared bats take a variety of prey on the wing from the edge of forested habitats but also glean prey from vegetation to forage, including small moths, beetles, flies, lacewings, wasps, bees, and ants.

Big-eared bats are very sensitive to human disturbances, and a single disturbance of a maternity roost or hibernation site may cause abandonment (Zeiner *et al*. 1990B). All known limestone cave sites in California, for example, have been abandoned (Zeiner *et al*. 1990B). Other plausible threats to big-eared bats resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-

term impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites, roost site and foraging habitat degradation, such as trampling and invasive species, and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered through the Project area, as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The big-eared bat was not detected during the year 2004 and 2006 surveys (Impact Sciences 2005; Johnson 2006). This species is more effectively sampled by capture methods than by acoustic methods because they have a relatively low-intensity call and can only be detected at distances of less than five meters (16 feet) from the Anabat detector (O'Farrell and Gannon 1999). Therefore, the failure to detect this species on site should not be considered absence from the Project area. Because the big-eared bat occurs throughout California, except at the highest elevations, and because the Project area supports substantial suitable habitat for the species, for the purpose of the impact analysis, the big-eared bat is considered to have moderate potential to occur on site.

The big-eared bat is known to use a variety of habitats throughout its range; therefore, it is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats, shows impacts to all vegetation communities because the big-eared bat is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The Townsend's big-eared bat forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitat for the big-eared bat would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the big-eared bat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Big-eared bats are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be injured or killed. Furthermore, even if young escaped direct impacts, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-

status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect big-eared bats in areas adjacent to construction zones. There is no evidence of existing big-eared bat day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause big-eared bats to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the big-eared bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;
- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined direct permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different, Alternative 4 would be marginally less overall, and Alternatives 5 and 6 would be marginally more overall. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under this alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the big-eared bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other changes in the Project footprint under Alternative 7 that reduce impacts to big-eared bat suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the big-eared bat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the big-eared bat:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed

under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the big-eared bat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual big-eared bats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The impacts to individual big-eared bats occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual big-eared bats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to big-eared bat: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals and roosting sites and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon roost sites with a single disturbance

event. If individuals, including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the big-eared bat in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the big-eared bat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the big-eared bat. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the Townsend's big-eared bat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-87 IMPACTS TO INDIVIDUALS – TOWNSEND'S BIG-EARED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to big-eared bat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to big-eared bat individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to big-eared bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-88 LOSS OF HABITAT – TOWNSEND'S BIG-EARED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the big-eared bat. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the big-eared bat and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the big-eared bat. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the big-eared bat because insect diversity and abundance would be enhanced.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the big-eared bat because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic

stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the big-eared bat and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the big-eared bat that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Suitable Habitat After Mitigation

After mitigation, the loss of habitat for big-eared bat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-89 SECONDARY IMPACTS – TOWNSEND'S BIG-EARED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of big-eared bat. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect big-eared bat roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to big-eared bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

WESTERN MASTIFF BAT (CSC)

Life History

The western mastiff bat (*Eumops perotis californicus*) is widespread in the southwestern United States; the northern portion of Baja California, Mexico; and south into central mainland Mexico (Hall 1981). In the United States, it occurs in northern, central, and southern California; the southern portion of Nevada; the southwestern half of Arizona; and the extreme southwestern portions of New Mexico and Texas (Hall 1981). In California, its yearlong range includes the San Joaquin Valley, the coastal region from the San Francisco Bay area south to San Diego, and the Transverse and Peninsular mountain ranges and Mojave and Colorado deserts of southern California (Zeiner *et al.* 1990B). It is absent in California from the agricultural regions of the Central Valley, northwestern California, and the Great Basin Desert of northeastern California (Zeiner *et al.* 1990B). In California, the CNDDB (CDFG 2007A) contains 251 records for this species. Records are scattered around the state, but many of the records are from counties in southern California, including Los Angeles (28 records), San Diego (27 records), Orange and Riverside (18 records each), San Bernardino and Imperial (10 records each), and Ventura (four records).

The western mastiff bat occurs in a wide variety of chaparral, coastal scrub, coniferous and deciduous forest and woodland, and desert scrub habitats (Best *et al.* 1996; Zeiner *et al.* 1990B). Day roosts are established in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical (Best *et al.* 1996) as well as in trees and tunnels (Zeiner *et al.* 1990B). This species has also adapted to roosting in buildings and has been observed hanging from various other kinds of man-made structures, including awnings, ledges over doors and windows, large cracks in masonry, and rafters (Best *et al.* 1996). Although western mastiff bats are yearlong residents in California and are known to shift day roosts throughout the year, whether they are seasonally migratory is unknown.

This species exhibits yearlong nocturnal activity and emerges from the day roost within about 40 to 50 minutes after sundown (Zeiner *et al.* 1990B). It forages for a variety of small to large low- and weak-flying insects that it catches in flight from near ground level to the tops of trees, including dragonflies, damselflies, grasshoppers, crickets, mantids, walking sticks, true bugs, beetles, moths, ants, wasps, and bees.

Western mastiff bats form small colonies in day roosts up to about 100 individuals in crevices in canyons and cliffs and man-made structures. Maternity colonies include both males and females.

Young are born from June to possibly September. The maturation period of the young is unknown, and it is unknown when young are first able to fly.

No specific threats to western mastiff bat colonies have been reported in the scientific literature (*e.g.*, Best *et al.* 1996) but, because it has adapted to roosting in man-made structures, it is vulnerable to vandalism, extermination, or inadvertent disturbance of roost sites in buildings. Human collection of this species likely is not a risk because western mastiff bat attempts to bite when handled (Best *et al.* 1996). Other plausible threats to western mastiff bats resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites, roost site and foraging habitat degradation, such as trampling and invasive species, and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered throughout the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The western mastiff bat was audibly detected (mastiff bat signals are detectable by humans) in 2006 along the Santa Clara River at Walcott Road (Johnson 2006). The species is known to use a variety of habitats throughout its range; therefore, it is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of

Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats, shows impacts to all vegetation communities because the western mastiff bat is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The western mastiff bat forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitats for the western mastiff bat would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial

adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the western mastiff bat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Western mastiff bats are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1).

If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect western mastiff bats in areas adjacent to construction zones. There is no evidence of existing western mastiff bat day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause western mastiff bats to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the western mastiff bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;

- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;
- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined direct permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different, Alternative 4 would be marginally less overall, and Alternatives 5 and 6 would be marginally to somewhat more overall. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the western mastiff bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the

development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other changes in the Project footprint under Alternative 7 that reduce impacts to western mastiff bat suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the western mastiff bat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the western mastiff bat:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the western mastiff bat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual western mastiff bats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual western mastiff bats occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as increased human activity, noise, roads, bridges, and lighting. The loss or degradation of suitable habitat and impacts to individual western mastiff bats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western mastiff bat: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals and roosting sites and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon roost sites with a single disturbance event. If individuals, including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged and create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas

would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the western mastiff bat in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the western mastiff bat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the western mastiff bat. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures, such as chemical suppression and screening fencing, where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the western mastiff bat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-90 IMPACTS TO INDIVIDUALS – WESTERN MASTIFF BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to western mastiff bat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to western mastiff bat individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to western mastiff bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-91 LOSS OF HABITAT – WESTERN MASTIFF BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the western mastiff bat. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the western mastiff bat and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the western mastiff bat. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the western mastiff bat.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the western mastiff bat because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the western mastiff bat and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the western mastiff bat that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for western mastiff bat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-92 SECONDARY IMPACTS – WESTERN MASTIFF BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of western mastiff bat. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect western mastiff bat roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to western mastiff bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

WESTERN RED BAT (CSC)

Life History

The western red bat (*Lasiurus blossevillii*) occurs in California from Shasta County and Mendocino County in the north, and through the central coastal region and the Central Valley west of the Sierra Nevada/Cascade ranges to coastal southern California (Cryan 2003; Zeiner *et al.* 1990B), east into Arizona and New Mexico, and south into Baja California and mainland Mexico to South America (Cryan 2003). The species does not occur in desert regions. The western red bat had been considered a subspecies of the red bat (*L. borealis teliotis*) (Shump and Shump 1982), but more recent genetic studies separated the red bat into two species: the western red bat and the eastern red bat (*L. borealis*) (Baker *et al.* 1988; Morales and Bickham 1995). Morales and Bickham (1995) used mitochondrial DNA (mtDNA) to support the separation of the two species. The western red bat is considered locally common. The species inhabits California year-round but makes seasonal movements within the state and, possibly, to Arizona and New Mexico (Cryan 2003).

There is little ecological information specifically for the western red bat; most studies are based on the red bat before it was separated into the western and eastern species. This species account is, therefore, based primarily on information for the red bat before it was separated into the two species.

Red bats (*Lasiurus* spp.) typically roost in trees, occasionally in shrubs, and even on the ground (Shump and Shump 1982). They are usually solitary, but different bats may use different roosts on different days, and they occasionally form nursery colonies. Day roosts are commonly located in edge habitats adjacent to streams, open fields, and urban areas (Shump and Shump 1982).

Red bats take a variety of prey, including moths, crickets, flies, true bugs, beetles, and cicadas (Shump and Shump 1982). They generally forage in grasslands, shrublands, open woodlands, and croplands, but they also take advantage of congregations of insects attracted to streetlights and building floodlights.

Births occur in about mid-June and young develop rapidly, with flight occurring by 21 to 42 days of age (Shump and Shump 1982).

Like other bats, western red bats probably are generally vulnerable to human activity and related impacts. Unlike many other bat species, due to their use of day roosts in trees, shrubs, and sometimes on the ground, western red bats are especially vulnerable to predation by domestic cats, as well as opossums, great horned owls, kestrels, and roadrunners. Other plausible threats to western red bats resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term

impacts from urban development, in addition to pet, stray, and feral animals, include human disturbances of roost sites, roost site and foraging habitat degradation, such as trampling and invasive species, and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered throughout the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

There were three acoustic detections of the western red bat in the Project area. Two 2004 detections (Impact Sciences 2005) were in willow riparian habitat, and the 2006 detection was under The Old Road Bridge (Johnson 2006). The species is known to use a variety of habitats throughout its range; therefore, it is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site**. Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats, shows impacts to all vegetation communities because the western red bat is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The western red bat forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitats for the western red bat would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the western red bat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Western red bats are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect western red bats in areas adjacent to construction zones. There is no evidence of existing western red bat day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause western red bats to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agricultural or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites or prey on bats.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the western red bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;

- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined direct permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different, Alternative 4 would be marginally less overall, and Alternatives 5 and 6 would be marginally to somewhat more overall. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the western red bat (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara

River and other changes in the Project footprint under Alternative 7 that reduce impacts to western red bat suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the western red bat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the western red bat:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the western red bat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual western red bats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the

relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual western red bats occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual western red bats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western red bat: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals and roosting sites and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon roost sites with a single disturbance event. If individuals, including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the western red bat in the Project area. The combined Newhall Ranch

Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the western red bat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the western red bat. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures, such as chemical suppression and screening fencing, where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the western red bat are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-93 IMPACTS TO INDIVIDUALS – WESTERN RED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to western red bat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to western red bat individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, loss of or harm to western red bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-94 LOSS OF HABITAT – WESTERN RED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the western red bat. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the western red bat and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the western red bat. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the western red bat.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the western red bat because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48.SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the western red bat and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the western red bat that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for western red bat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-95 SECONDARY IMPACTS – WESTERN RED BAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of western red bat. Potential long-term effects of development include lighting, increased human activity, pet, stray, and feral cats and dogs that may disturb roost sites and prey on bats, and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect western red bat roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to western red bat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SAN DIEGO DESERT WOODRAT (CSC)

Life History

The desert woodrat (*Neotoma lepida*) is widespread throughout central and southern California and the Great Basin, Mojave, and Colorado deserts. Marginal records for the San Diego desert woodrat (*N. l. intermedia*) in the United States include San Luis Obispo, San Fernando in Los Angeles County, the San Bernardino Mountains and Redlands in San Bernardino County, and Julian in San Diego County (Hall 1981).

Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth (Bleich 1973; Bleich and Schwartz 1975; Brown *et al*. 1972; Cameron and Rainey 1972; Thompson 1982). Desert woodrats are noted for their flexibility or plasticity in utilizing various materials, such as twigs and other debris (sticks, rocks, dung), to build elaborate dens or "middens," which typically include several chambers for nesting and food as well as several entrances. Middens may be used by several generations of woodrats (Cameron and Rainey 1972).

Desert woodrats are primarily herbivorous, and their diet may include leaves, seeds, berries, parts of flowers, and yucca shoots (Cameron and Rainey 1972).

The desert woodrat is a relatively sedentary species with patterns of movement and spatial activity primarily determined by habitat structure (Thompson 1982). Den sites tend to be on the periphery of the home range; woodrats move between loci along distinct routes. Home ranges of desert woodrats are relatively small, with observed male and female home ranges in north-coastal San Diego County of 371 square meters (0.09 acre) and 433 square meters (0.11 acre), respectively (Bleich and Schwartz 1975). Average moves by males and females were 13.2 meters (43 feet) and 14.5 meters (48 feet) (Bleich and Schwartz 1975).

The breeding season of desert woodrats probably is related to local climate conditions and available resources to support reproduction that may vary from year to year. The peak breeding season in north-coastal San Diego appears to be from November to April, but breeding can occur year-round (Bleich 1973).

Desert woodrats are vulnerable to at least two long-term effects related to urbanization. First, increased fire frequency may cause type conversion of coastal scrub and chaparral habitats to California annual grassland, making recolonization of such areas unlikely. Cactus patches destroyed by fire, in particular, require a long period of recovery to become suitable for woodrats. Second, increased predation of native rodents, including woodrats, by cats and other mesopredators in habitat edges also may occur with urbanization (Bolger *et al.* 1997). Compounding this problem is a decline in coyote population numbers in fragmented habitats, resulting in the "mesopredator release" effect because coyotes are no longer preying on

mesopredators (Crooks and Soulé 1999). Declines in the coyote population result in an increase in the abundance of mesopredators, such as domestic cat, raccoon, opossum, and fox, which are the principal predators of small mammals such as woodrats. Finally, use of rodenticides for pest management is a potential threat to this species.

Survey Results

Small mammal live-trapping found that the San Diego desert woodrat is a relatively common rodent within the Specific Plan portion of the Project area (Impact Sciences 2005). The highest frequency of captures of the desert woodrat was in coastal scrub, with fewer captures in mixed scrub, coast live oak woodland, dry wash, willow riparian, and mulefat scrub. Although some captures were in oak woodland and riparian scrubs, the primary habitat for this species is considered to be shrublands (coastal scrubs and chaparral). Alluvial scrub, big sagebrush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, coastal scrub alliances and associations, and *Eriodictyon* scrub are considered suitable habitats for the San Diego desert woodrat. A total of 6,575 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 80 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.2% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 9.0 acres would be temporarily impacted.

Although this species is still widespread and relatively common throughout its range, due to landscape habitat fragmentation and type conversion of coastal scrub and chaparral to grasslands through much of its range, resulting in local extirpations, the loss of 80 acres of habitat for the San Diego desert woodrat would have a substantial direct adverse effect

on a special-status species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 1,971 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 30.0% of the habitat on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

A relatively large amount and percentage of on-site shrub communities providing habitat for the San Diego desert woodrat would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 30.0% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,052 acres (31.2%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the San Diego desert woodrat on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because desert woodrats are not highly mobile, the proposed Project would result in injury and mortality of individuals occupying suitable habitat during construction and/or grading activities as a result of implementation of the RMDP. These impacts would occur as result of direct contact with construction equipment or entombment during vegetation clearing and grading. Animals flushed from dens during construction would likely be disoriented and may be unable to find safe refuge, resulting in exposure, increased predation, and increased vehicle collisions. Implementation of the SCP would not directly impact this species.

Although this species is still widespread and relatively common throughout its range, due to landscape habitat fragmentation and type conversion of coastal scrub and chaparral to

grasslands throughout much of its range, resulting in local extirpations, these impacts to individual San Diego desert woodrats would have a substantial direct adverse effect on a special-status species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent impacts because San Diego desert woodrats are not highly mobile. The number of San Diego desert woodrat individuals that would be injured or killed during construction as a result of build-out of the Specific Plan, VCC, and Entrada planning areas is potentially much greater than injured or killed during implementation of the RMDP because of the much greater loss of suitable habitat. This loss of individuals would have a substantial adverse effect on this species, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect San Diego desert woodrats in areas adjacent to construction zones. These impacts could include collapsed burrows and middens due to ground vibration; abandonment of burrows or middens; and disruptions associated with increased human activity, noise, and nighttime illumination—the latter of which may disrupt the woodrats' nocturnal behavior and make them more vulnerable to predation by nocturnal predators, such as owls and coyotes. Implementation of the SCP would not affect this species.

Potential long-term secondary impacts would primarily stem from build-out of the Specific Plan, VCC, and Entrada planning areas. These impacts include habitat fragmentation and isolation of some local populations of San Diego desert woodrats, making them more vulnerable to extirpation, as well as increased human activity in open space areas. Several other long-term secondary effects could occur from the close proximity of urban development to suitable San Diego desert woodrat habitat: abandonment of burrows and middens; disruption of nocturnal activities; greater vulnerability to predation by nocturnal predators (*e.g.*, owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators (see Crooks and Soulé 1999); and vulnerability to rodenticides that may be used to control pest rodents (*e.g.*, ground squirrels in landscaped areas or golf courses).

Short-term secondary impacts would have a substantial adverse effect on a special-status species (significance criterion 1). Long-term secondary impacts would also have a substantial adverse effect on a special-status species and permanently reduce San Diego desert woodrat populations

along the urban–open space edge and contribute to the reduction of the range and distribution of the San Diego desert woodrat in the Project area (significance criteria 1 and 7). Overall, short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the San Diego desert woodrat **(Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat**)**:

- Alternative 3 – 76 acres (1.2%) of permanent loss and 12 acres of temporary loss;
- Alternative 4 – 77 acres (1.2%) of permanent loss and 8.7 acres of temporary loss;
- Alternative 5 – 82 acres (1.2%) of permanent loss and 14 acres of temporary loss;
- Alternative 6 – 68 acres (1.0%) of permanent loss and 16 acres of temporary loss; and
- Alternative 7 – 42 acres (0.6%) of permanent loss and 43 acres of temporary loss.

Compared to Alternative 2, which would result in 80 acres (1.2%) of permanent loss and 9.0 acres of temporary impacts, the permanent and temporary loss of habitat under Alternatives 3 through 5 would not be substantially different, while the impacts under Alternative 6 would be marginally different compared to Alternative 2. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in fewer permanent impacts and relatively more temporary impacts to suitable habitat for San Diego desert woodrat compared to the other alternatives.

Because of the loss and fragmentation of habitat for the San Diego desert woodrat throughout its range, and because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is similar in magnitude compared to the loss of habitat under Alternative 2, the impacts would significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the San

Diego desert woodrat **(Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat**)**:

- Alternative 3 – 1,866 acres (28.4%) of permanent loss;
- Alternative 4 – 1,814 acres (27.6%) of permanent loss;
- Alternative 5 – 1,767 acres (26.9%) of permanent loss;
- Alternative 6 – 1,517 acres (23.1%) of permanent loss; and
- Alternative 7 – 1,349 acres (20.5%) of permanent loss.

Compared to Alternative 2, which would result in 1,971 acres (30.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the San Diego desert woodrat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the San Diego desert woodrat occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the San Diego desert woodrat:

- Alternative 3 – 1,942 acres (29.5%) of permanent loss;
- Alternative 4 – 1,892 acres (28.8%) of permanent loss;
- Alternative 5 – 1,849 acres (28.1%) of permanent loss;
- Alternative 6 – 1,586 acres (24.1%) of permanent loss; and
- Alternative 7 – 1,391 acres (21.2%) of permanent loss.

Compared to Alternative 2, which would result in 2,052 acres (31.2%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7; there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the San Diego desert woodrat compared to the other alternatives. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the San Diego desert woodrat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual San Diego desert woodrats as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual San Diego desert woodrats occurring as a result of implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity, noise, habitat fragmentation, ground vibration, nighttime lighting, and rodenticides. Therefore, the loss or degradation of suitable habitat and impacts to individual San Diego desert woodrats due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to San Diego desert woodrat: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur if dens are disturbed during construction, including direct destruction of dens from vegetation clearing and grading that could result in injury or mortality of individuals from direct contact with equipment or entombment or as result of flushing from the den due to increased human activity, noise, and ground vibration. If individuals are flushed from a den during construction they would likely become disoriented and unable to find safe refuge, resulting in exposure, increased risk of predation, and increased risk of vehicle collisions. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys within the proposed disturbance area to identify, capture, and relocate woodrat individuals. Active nests with young inside or within 100 feet the disturbance zone will be protected by fencing. Biological monitoring will be conducted during vegetation clearing and grading activities. If San Diego desert woodrats are observed in the disturbance zone outside the breeding season, individuals will be relocated to a suitable location outside the disturbance boundary.

The combined permanent loss of suitable habitat for the San Diego desert woodrat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,391 acres (21.2%) under Alternative 7 to 2,052 acres (31.2%) under Alternative 2. This would be a substantial loss of suitable habitat and will reduce the size and distribution of the San Diego woodrat population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the San Diego desert woodrat in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 3,488 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, woodrats occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, and ground vibration, which may cause them to abandon the nest and increase their exposure to predation and vehicle collisions. Abandonment of an active nest likely would also result in the loss of their litter. Lighting of occupied habitat would increase predation risk from nocturnal predators. The pre-construction surveys, protection of nest with young, and biological monitoring during vegetation clearing and grading, as well as controls on lighting, will help reduce these construction-related impacts. Potential long-term effects of development include

habitat fragmentation, increased human activity, pet, stray, and feral cats and dogs, lighting, and use of rodenticides. The large open space system will provide adequate protected open space that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting will be downcast away from open space areas. Rodenticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for the San Diego desert woodrat are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-96 IMPACTS TO INDIVIDUALS – SAN DIEGO DESERT WOODRAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to San Diego desert woodrat individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two mitigation measures that will reduce impacts to San Diego desert woodrat individuals through pre-construction coordination and surveys.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-58 requires a survey within the proposed disturbance area to identify, capture, and relocate the San Diego desert woodrat 30 days prior to construction in suitable habitats. If active San Diego desert woodrat nests with young are identified within the disturbance zone or 100 feet of the disturbance zone, a fence shall be erected around the nest site to provide the San Diego desert woodrat with sufficient habitat. If San Diego desert woodrats are observed in the disturbance

zone outside the breeding season, individuals shall be relocated to a suitable location outside the disturbance boundary.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to San Diego desert woodrat individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-97 LOSS OF HABITAT – SAN DIEGO DESERT WOODRAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the loss of suitable habitat for the San Diego desert woodrat. These mitigation measures primarily relate to habitat protection, restoration and enhancement, and management in the River Corridor SMA and High Country SMA.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, etc.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that are used by San Diego desert woodrat and some captures on site occurred in southern willow scrub and mulefat scrub (Impact Sciences 2005). Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation; native riparian plants shall be incorporated into landscaping where feasible; roads and bridges shall be designed to discourage public access to the River Corridor SMA; and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures that will mitigate for the loss of suitable habitat for the San Diego desert woodrat; these relate to habitat restoration in the River Corridor SMA, High Country SMA, and Salt Creek area and preservation of habitat in the Salt Creek area.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, loss of habitat for San Diego desert woodrat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-98 SECONDARY IMPACTS – SAN DIEGO DESERT WOODRAT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate for potential short-term secondary effects related to construction and long-term secondary impacts due to habitat fragmentation, increased human activity, abandonment of burrows and middens, and disruption of nocturnal activities and greater vulnerability to predation by nocturnal predators (*e.g.*, owls and coyotes) as a result of nighttime lighting.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-27, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and that generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce short-term construction-related secondary impacts, such as collapsed burrows and middens due to ground vibration, abandonment of burrows or middens, and disruptions associated with increased human activity and noise, and long-term secondary impacts related to habitat fragmentation, increased human activity, predation and harassment by pet, stray, and feral cats and dogs, and use of pesticides (including rodenticides).

BIO-52 and BIO-58, as described above, will be implemented to reduce construction-related secondary impacts to San Diego desert woodrats in close proximity to disturbance zones. These measures include pre-construction coordination (BIO-52) and pre-construction surveys and protection of nests within 100 feet of the disturbance zone boundary (BIO-58).

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from habitat fragmentation and increased human activity through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to San Diego desert woodrat and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTHERN GRASSHOPPER MOUSE (CSC)

Life History

The southern grasshopper mouse (*Onychomys torridus*) occurs throughout desert habitats in the southwestern United States and much of Mexico, including western Nevada; the southern portions of California, Arizona, and New Mexico; northern Baja California; western Texas; and south to central Mexico (Hall 1981). The subspecies *O. t. ramona*, which is a California Species of Special Concern (CSC), is restricted to coastal southern California, with marginal records for Mint Canyon west of Palmdale and San Fernando in Los Angeles County, Riverside and Valle Vista in Riverside County, and Warner Pass, La Puerta Valley, Jacumba, Santee Mountains, and the mouth of the Tijuana River Valley in San Diego County (Hall 1981). The subspecies *O. t. pulcher* is more widespread and occurs to the east of *O. t. ramona* in the Mojave and Colorado deserts and as far west as the Antelope Valley in Los Angeles County (Hall 1981). In California, the CNDDB (CDFG 2007A) contains 28 records for the subspecies *O. t. ramona* from the following counties in southern California: San Diego and Riverside (11 records each), Los Angeles (two records), and San Bernardino and Imperial (one record each). The four records from Los Angeles County include Mint Canyon in the Angeles National Forest about three miles west of Agua Dulce, Pearblossom in the Mojave Desert, Tujunga Valley, and Arroyo Seco in Pasadena. The Mint Canyon record, which dates back to 1930, is located approximately 15 miles east of the Project area.

The southern grasshopper mouse rangewide is found in low arid scrub and semi-scrub vegetation (Frank and Heske 1992; McCarty 1975), and the subspecies *O. t. ramona* occurs in grasslands and sparse coastal scrub habitats. Specific habitat requirements of the southern grasshopper mouse generally are unknown, but Stapp (1997) found that the southern grasshopper mouse uses open expanses and microhabitats dominated by gopher mounds and burrows, possibly because of greater prey availability (*e.g.*, arthropods using burrows for refuge), greater mobility in open expanses, and dust bathing sites in these microhabitats.

The southern grasshopper mouse's diet consists mainly of arthropods (*e.g.*, crustaceans, insects, centipedes, millipedes, and arachnids), but may also include other insects and small rodents (Baily and Sperry 1929; Horner *et al.* 1965; McCarty 1975; Stapp 1997). The southern grasshopper mouse is primarily nocturnal and appears to be active on the surface all year round (Baily and Sperry 1929; Frank and Heske 1992; McCarty 1975).

The timing of breeding probably varies geographically and in relation to environmental conditions, but the peak breeding season is May through July (McCarty 1975). The southern grasshopper mouse exhibits postpartum estrus and can produce up to 12 litters in a year (McCarty 1975). Year-to-year survival appears to be low for the southern grasshopper mouse and juvenile mortality and/or dispersal appears to be very high. There is very little information about dispersal of the southern grasshopper mouse. Stapp (1997) reported that most juveniles

had disappeared from the study site by autumn, but no distinction was made between mortality and dispersal. Because of its high population turnover, relatively early age of sexual maturity, and senescence after the first year, the southern grasshopper mouse probably is subject to "boom and bust" population cycles and is perhaps at high risk of local extirpation under poor conditions.

Average home ranges estimated using radiotelemetry were approximately 9.1 acres for breeding males, 4.2 acres for non-breeding males, and 4.2 acres for females (Frank and Heske 1992). During the breeding season, there was extensive home-range overlap between males and between males and females, but there was little overlap in the home ranges of females (Frank and Heske 1992).

Population densities of the southern grasshopper mouse are relatively low for a rodent species. McCarty (1975) reported a density of 0.7 mice per acre in a Mojave Desert creosote scrub community and others also have reported low population densities (*e.g.*, Baily and Sperry 1929; Frank and Heske 1992). Such low population densities are consistent with the species' carnivorous habits and the distribution and availability of prey items.

There are no identified threats to the southern grasshopper mouse other than loss and fragmentation of grassland and sparse sage scrub habitats in coastal southern California, which probably are the greatest threats to local southern grasshopper mouse populations. Related threats that generally apply to native rodents are increased predation along habitat edges (Bolger *et al.* 1997) and "mesopredator release" effect where declines of coyote population numbers contribute to the increase in abundance of mesopredators, such as domestic cat, raccoon, opossum, and fox, which are the principal predators of small mammals (Crooks and Soulé 1999). In addition, pesticides that could reduce insect prey or cause secondary poisoning, as well as rodenticides that may directly affect the southern grasshopper mouse, are potential threats to this species.

Survey Results

The small mammal live-trapping study conducted by Impact Sciences (2005) did not document the southern grasshopper mouse in the Project area. The trapping study was adequate for the majority of the small rodents likely to occur in the Project area; however, a potential limitation of the study for the southern grasshopper mouse is that, where population densities are low, traps may need to be spread over a wider area to adequately sample for the species. The species also was not captured in pitfall trapping studies in 2004 and 2006 that were conducted primarily to inventory the reptiles and amphibians in the Project area (Impact Sciences 2006A). While the presence or absence of the southern grasshopper mouse on site cannot be confirmed by this study, the lack of captures indicates that the probability of the species being present is low, and that, if present, it likely occurs in very low densities. It is assumed for this analysis that the southern grasshopper mouse has the potential to occur on site at least in low densities in suitable habitat, which includes alluvial scrub, big sagebrush scrub, big sagebrush–California buckwheat,

California sagebrush scrub and associations, California sagebrush–California buckwheat, California sagebrush–undifferentiated chaparral, purple needlegrass, and California annual grassland. A total of 6,720 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 78 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.2% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A total of 17 acres would be temporarily impacted.

Because the southern grasshopper mouse is restricted to coastal southern California and has suffered extensive habitat loss and fragmentation within its range, the permanent loss of 78 acres of suitable habitat and temporary impacts as a result of construction and/or grading activities would have a substantial direct adverse effect on this species, if present (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 2,576 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 38.3% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat).

A relatively large amount and percentage of on-site habitats providing suitable habitat for the southern grasshopper mouse would be permanently removed as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. Because of the small geographic range of the southern grasshopper mouse and extensive loss and fragmentation of habitat

within its range, this loss of habitat would have a substantial adverse effect on this species, if present, by eliminating approximately 38.3% of suitable habitat, and thus substantially reducing its numbers and potential range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,654 acres (39.5%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the southern grasshopper mouse on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because southern grasshopper mice are fossorial (burrowers) and probably are not mobile enough to escape impacted areas, if individuals are present, the proposed Project would result in injury or mortality of individuals occupying this habitat during vegetation clearing and/or grading activities through direct contact with construction equipment or entombment in burrows. Implementation of the SCP would not directly impact this species. Although, if present, very few individuals likely would be killed or injured because of the relatively small amount of suitable habitat directly impacted and the likely low population density, if present on site, because of the rangewide loss and fragmentation of habitat, the loss of any individuals as a result of construction and/or grading activities would have a substantial direct adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The source of indirect permanent impacts to individuals is the same as that described above for direct impacts, but the risk would be much greater due to the large amount of scrub and grassland habitats that would be impacted as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. If the species is present on site, there is high potential for injury or mortality of southern grasshopper mice during vegetation clearing and/or grading due to direct contact with equipment or entombment. The loss of any individuals would have a substantial adverse effect on this species on site through

injury and mortality and by eliminating the species from approximately 38.3% of currently occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect any southern grasshopper mice, if present, in areas adjacent to construction zones. These impacts could include collapsed burrows due to ground vibration; abandonment of burrows during the daytime resulting in exposure, and increase risk of predation and vehicle collisions; and disruptions associated with increased human activity, noise, and nighttime illumination, the latter of which may disrupt the species' nocturnal behavior and make them more vulnerable to predation by nocturnal predators, such as owls and coyotes. Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would be short term and would affect a relatively small proportion of the southern grasshopper mouse population in the Project area, if present. Implementation of the SCP would not affect this species.

This species, if present, probably occurs at a very low population density and it is unlikely that a large number of individuals would occupy habitat adjacent to construction zones. However, because of the widespread loss and fragmentation of habitat for species within its range, these impacts would have a substantial direct adverse effect on this species (significance criterion 1).

Potential long-term secondary impacts include habitat fragmentation and potential isolation of local populations of the southern grasshopper mouse resulting from build-out of the Specific Plan, VCC, and Entrada planning areas, making the species, if present, more vulnerable to extirpation. In addition, over the long term, the close proximity of urban development to suitable southern grasshopper mouse habitat could result in abandonment of burrows; disruption of nocturnal activities; greater vulnerability to predation by nocturnal predators (*e.g.*, owls and coyotes) as a result of nighttime lighting; greater vulnerability to predation by pet, stray, and feral cats and dogs as well as other mesopredators such as raccoons, foxes, skunks, and opossums (Crooks and Soulé 1999); and vulnerability to pesticides, which may reduce insect prey and cause secondary poisoning and rodenticides that may be used to control pest rodents (*e.g.*, ground squirrels in landscaped areas or golf courses). These long-term secondary impacts would permanently reduce southern grasshopper mouse populations that may occur along the urban–open space edge and contribute to the reduction of the range and distribution of the southern grasshopper mouse in the Project area (significance criteria 1 and 7).

Both short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the southern grasshopper mouse (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 82 acres (1.2%) of permanent loss and 25 acres of temporary loss;
- Alternative 4 – 74 acres (1.1%) of permanent loss and 17 acres of temporary loss;
- Alternative 5 – 96 acres (1.4%) of permanent loss and 28 acres of temporary loss;
- Alternative 6 – 109 acres (1.6%) of permanent loss and 32 acres of temporary loss; and
- Alternative 7 – 41 acres (0.6%) of permanent loss and 89 acres of temporary loss.

Compared to Alternative 2, which would result in 78 acres (1.2%) of permanent loss and 17 acres of temporary impacts, the permanent loss of habitat would not be substantially different under Alternatives 3 and 4, would be marginally different under Alternative 5, and would be somewhat greater under Alternative 6. Compared to Alternative 2, the temporary loss of habitat would be the same under Alternative 4 and would be somewhat greater under Alternatives 3, 5, and 6. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in reduced permanent impacts and greater temporary impacts to suitable habitat for the southern grasshopper mouse compared to the other alternatives.

Because of the widespread loss and fragmentation of habitat for the southern grasshopper mouse within its range, and because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 generally would be similar in magnitude compared to Alternative 2, the impacts would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the southern grasshopper mouse (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7

Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 2,408 acres (35.8%) of permanent loss;
- Alternative 4 – 2,311 acres (34.4%) of permanent loss;
- Alternative 5 – 2,232 acres (33.2%) of permanent loss;
- Alternative 6 – 1,950 acres (29.0%) of permanent loss; and
- Alternative 7 – 1,738 acres (25.9%) of permanent loss.

Compared to Alternative 2, which would result in 2,576 acres (38.3%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in reduced impacts to suitable habitat for the southern grasshopper mouse compared to the other alternatives.

Because of the widespread loss and fragmentation of habitat for the southern grasshopper mouse within its range, and because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to or somewhat less than the overall loss of habitat under Alternative 2, the impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the southern grasshopper mouse:

- Alternative 3 – 2,490 acres (37.1%) of permanent loss;
- Alternative 4 – 2,385 acres (35.5%) of permanent loss;
- Alternative 5 – 2,328 acres (34.6%) of permanent loss;
- Alternative 6 – 2,060 acres (30.6%) of permanent loss; and
- Alternative 7 – 1,779 acres (26.5%) of permanent loss.

Compared to Alternative 2, which would result in 2,654 acres (39.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7. There would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the southern grasshopper mouse compared to the other alternatives. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the southern grasshopper mouse occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual southern grasshopper mice as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Because of the widespread loss and fragmentation of habitat for the southern grasshopper mouse within its range, impacts to individual southern grasshopper mice, if present, occurring as a result of implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 if the southern grasshopper mouse occurs on site. These impacts would be similar to those presented above for Alternative 2 because each alternative would have similar short-term impacts (vibration, noise, human activity, lighting) and long-term effects due to factors such as increased human activity, habitat fragmentation, nighttime lighting, increased predation, and pesticides (including rodenticides). Both short-term and long-term secondary impacts resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to southern grasshopper mouse, if present on site: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur if burrows are disturbed during construction, including direct destruction of burrows from vegetation clearing and grading that could result in injury or mortality of individuals from direct contact with equipment or entombment or as result of flushing from the burrow due to increased human activity, noise, and ground vibration. If individuals are flushed from a burrow during construction they would likely become disoriented and unable to find safe refuge, resulting in exposure, increased risk of predation, and increased risk of vehicle collisions. In order to avoid, minimize, and mitigate these impacts, procedures for minimizing harm to or harassment of wildlife will be implemented and biological monitoring will be conducted during vegetation clearing and grading activities.

The combined permanent loss of habitat for the southern grasshopper mouse resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,779 acres (26.5%) under Alternative 7 to 2,654 acres (39.5%) under Alternative 2. This would be a substantial loss of suitable habitat and will reduce the size and distribution of the southern grasshopper mouse population, if present, in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the southern grasshopper mouse in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 2,657 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, southern grasshopper mice, if present, occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, and ground vibration, which may cause them to abandon burrows and increase their exposure to predation and vehicle collisions. Abandonment of a natal burrow containing young likely would also result in the loss of their litter. Lighting of occupied habitat would increase predation risk from nocturnal predators. Implementation of procedures to minimize impacts during construction and biological monitoring during vegetation clearing and grading will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation, increased human activity, pet, stray, and feral cats and dogs, lighting and use of pesticides, including rodenticides. The large open space system will provide adequate protected open space that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas,

including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting will be downcast away from open space areas. Pesticides, including rodenticides, will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for the southern grasshopper mouse are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-99 IMPACTS TO INDIVIDUALS – SOUTHERN GRASSHOPPER MOUSE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate the loss of southern grasshopper mouse.

Measures Recommended by EIS/EIR

This EIS/EIR recommends one mitigation measure related to pre-construction coordination and monitoring that will reduce impacts to southern grasshopper mouse individuals associated with construction activities.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to southern grasshopper mouse individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-100 LOSS OF HABITAT – SOUTHERN GRASSHOPPER MOUSE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the loss of habitat for the southern grasshopper mouse. These mitigation measures primarily relate to habitat protection, restoration and enhancement, and management in the River Corridor SMA and High Country SMA.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that are suitable for the southern grasshopper mouse, including grassland and scrub habitats, which will benefit from management. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures that will mitigate for the loss of suitable habitat for the southern grasshopper mouse that relate to habitat protection, restoration and enhancement, and/or habitat management in the River Corridor SMA, High Country SMA, and Salt Creek area.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are

provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, loss of habitat for the southern grasshopper mouse would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-101 SECONDARY IMPACTS – SOUTHERN GRASSHOPPER MOUSE

Significant for Alternatives 2, 3, 4, 5, 6, and 7

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the short-term effect of lighting during construction and long-term secondary impacts to the southern grasshopper mouse, such as habitat fragmentation and potential isolation of local populations, abandonment of burrows, and disruption of nocturnal activities and greater vulnerability to predation by nocturnal predators (*e.g.*, owls and coyotes) as a result of nighttime lighting.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will mitigate for habitat fragmentation through habitat protection, restoration and enhancement, and management.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA and thus protect suitable habitat for the southern grasshopper mouse. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will reduce short-term impacts related to construction activities, such as increased human activity, noise, and vibration, and long-term secondary impacts such as habitat fragmentation, predation and harassment by pet, stray, and feral cats and dogs, and the use of pesticides, including rodenticides.

BIO-52, as described above, includes procedures for reducing impacts to individuals and biological monitoring during initial vegetation clearing and grading.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from habitat fragmentation and increased human activity through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides, including rodenticides and insecticides, on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, long-term secondary impacts to the southern grasshopper mouse and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

AMERICAN BADGER (CSC)

Life History

The American badger (*Taxidea taxus*) ranges throughout the western United States; north into the western provinces of Canada; and east to Ohio, Michigan, and Ontario, Canada (Long 1972). It occurs from below sea level in Death Valley to the Arctic–Alpine Life Zone at about 3,600 meters AMSL (11,810 feet). Within California, the American badger occurs throughout the state except for the extreme northwestern coastal area (Zeiner *et al.* 1990B). The subspecies that occurs in the Project area, *T. t. berlandieri*, ranges into eastern California from about Lake Tahoe south throughout the Sierra Nevada and west to the Coast Ranges, including Baja California; east through Arizona, New Mexico, and southern Texas; and south into Mexico (Long 1972).

American badgers are generally associated with dry, open, treeless regions; prairies and grasslands; low-intensity agriculture (*e.g.*, pasture, dryland crops); drier open shrublands and forest; parklands; and cold desert areas (Long 1973; Zeiner *et al.* 1990B). American badgers are carnivores and feed on ground squirrels, cottontail rabbits, jackrabbits, small rodents, snakes, birds, insects, earthworms, eggs, and carrion (Errington 1937; Messick and Hornocker 1981; Snead and Hendrickson 1942; Zeiner *et al.* 1990B). They are fossorial (burrowing) and typically capture prey by digging them out of their burrows.

Adult American badgers are primarily nocturnal (*e.g.*, Lindzey 1978; Sargeant and Warner 1972), but juveniles appear to be active during the day, especially during dispersal from June through August (Messick and Hornocker 1981). Daily activity varies by season. American badgers often remain in their diurnal dens for days or weeks in torpor (not true hibernation) during the winter, but they may be active on warm winter days (Messick and Hornocker 1981; Wilson and Ruff 1999).

Birth of one to five offspring typically occurs in late winter and early spring (Lindzey 1978; Messick and Hornocker 1981), and young remain in the natal den for about six weeks (Wilson and Ruff 1999). Messick and Hornocker (1981) observed that most, but not all, juveniles dispersed from their natal area in southwestern Idaho. Juveniles emerged from natal dens in early May and family breakup occurred in late May and early June, with dispersal occurring at three to four months of age (June through July). Juveniles appear capable of dispersing up to 110 kilometers (68 miles). Juveniles use marginal and disturbed habitat and farmland during dispersal, which probably puts them at higher risk of mortality.

American badger home ranges are large and range from 240 hectares (593 acres) to 850 hectares (2,100 acres) (Lindzey 1978; Long 1973; Messick and Hornocker 1981; Minta 1993; Sargeant and Warner 1972). Home range is probably a function of food resource availability, social structure, and season. Aside from temporary family groups and transient mating bonds, and

despite overlapping home ranges, American badgers are mostly solitary animals (Davis 1946; Messick and Hornocker 1981; Minta 1993). Population densities of American badgers range from approximately two to six American badgers per square kilometer (*e.g.*, Messick and Hornocker 1981).

In addition to habitat loss and fragmentation, American badgers are vulnerable to vehicle collisions (especially during breeding and dispersal activities when individuals are moving longer distances) and accidental poisoning (Messick and Hornocker 1981). Other potential threats to the badger related to increasing urbanization include increased human activity and potential harassment by humans and pet, stray, and feral dogs, increased nighttime lighting which could affect their nocturnal activities, and the use of rodenticides that could result in reduction of their rodent prey base, in addition to accidental poisoning.

Survey Results

The American badger, although not common on site, has been documented three times in the Project area through systematic surveys and anecdotal observations of American badger dens and tracks: in the Specific Plan area (Impact Sciences 2005), at Potrero Creek in the Specific Plan area (Behrends 2006), and in the High Country SMA (Dudek and Associates 2006B).

The American badger is assumed to potentially occur in suitable habitat throughout the Project area because of documented occurrences on site and because of its large home ranges (Lindzey 1978; Long 1973; Messick and Hornocker 1981; Minta 1993; Sargeant and Warner 1972) and ability to disperse long distances (Messick and Hornocker 1981). Suitable habitats for the American badger on site are agriculture, alluvial scrub, big sagebrush scrub, California sagebrush scrub associations, big sagebrush–California buckwheat, California annual grassland, purple needlegrass, valley oak/grass, and river wash. A total of 9,131 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 216 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.4% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A total of 123 acres would be temporarily impacted.

Drainages such as Potrero Creek that are subject to RMDP impacts are particularly likely to support badger dens. Although the American badger is highly mobile and can use a variety of upland habitats, because this species is uncommon, even a small loss of potential den habitat would be a substantial adverse effect on this species. Therefore, loss of habitat and temporary impacts as a result of construction/grading activities associated with the RMDP would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,780 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 41.4% of the habitat on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat).

A relatively large amount and percentage of on-site habitats for the American badger would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 41.4% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,995 acres (43.8%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the American badger on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Adult American badgers are highly mobile and probably could escape from construction and/or grading activities of the RMDP. However, the proposed Project could result in mortality of young in a natal den and potentially the mother, which fiercely defends the natal den. Implementation of the SCP would not directly impact this species. Because individuals, particularly young, could be injured or killed during construction and/or grading activities, any loss of individuals would have a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent impacts to individuals in that breeding females and/or their young could be injured or killed during construction and/or grading activities. This risk is greater for the build-out of the Specific Plan, VCC, and Entrada planning areas than for the implementation of the RMDP and the SCP because of the much larger area of impact to suitable habitat. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect American badgers in areas adjacent to construction zones. These impacts could include short-term disruptions to essential behavioral activities (*e.g.*, foraging, breeding, and rearing of young) as a result of increased human activity noise, vibration, and nighttime illumination, and therefore could have a substantial adverse effect on a special-status species (significance criterion 1).

Potential long-term–development-related secondary impacts associated with use of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas include habitat fragmentation; increased risk of vehicle collisions as a result of new roads and increased traffic volumes on existing roads (*e.g.*, SR-126); nighttime illumination; increased human activity and potential harassment by humans and pet, stray, and feral dogs; and the use of rodenticides that could result in accidental poisoning and reduction of the rodent prey base for American badgers. These secondary impacts would permanently reduce the number of American badgers that may occur along the urban–open space edge, would interfere with the movement of American badgers in the Project vicinity, and would contribute to the reduction of the range and distribution of the American badger in the Project area (significance criteria 1, 4, and 7).

Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the American badger (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 195 acres (2.1%) of permanent loss and 160 acres of temporary loss;
- Alternative 4 – 186 acres (2.0%) of permanent loss and 162 acres of temporary loss;
- Alternative 5 – 223 acres (2.4%) of permanent loss and 156 acres of temporary loss;
- Alternative 6 – 209 acres (2.3%) of permanent loss and 161 acres of temporary loss; and
- Alternative 7 – 94 acres (1.0%) of permanent loss and 411 acres of temporary loss.

Compared to Alternative 2, which would result in 216 acres (2.4%) of permanent loss and 123 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat less overall and the permanent loss of habitat under Alternatives 5 and 6 would not be substantially different from Alternative 2. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat more overall. The difference between Alternative 7 and Alternative 2 impacts is primarily due

to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, and even the small loss of potential den habitat would be an adverse effect on this species, direct impacts to habitat resulting from implementation of the RMDP would be significant, absent mitigation for Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the American badger (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 3,569 acres (39.1%) of permanent loss;
- Alternative 4 – 3,436 acres (37.6%) of permanent loss;
- Alternative 5 – 3,350 acres (36.7%) of permanent loss;
- Alternative 6 – 2,967 acres (32.5%) of permanent loss; and
- Alternative 7 – 2,537 acres (27.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,780 acres (41.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that reduce impacts to American badger under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the American badger occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the American badger:

- Alternative 3 – 3,764 acres (41.2%) of permanent loss;
- Alternative 4 – 3,623 acres (39.7%) of permanent loss;
- Alternative 5 – 3,573 acres (39.1%) of permanent loss;
- Alternative 6 – 3,178 acres (34.8%) of permanent loss; and
- Alternative 7 – 2,630 acres (28.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,995 acres (43.8%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7. Reduced impacts would also occur because there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River (and its tributaries) and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the American badger occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual American badgers as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than the potential for impacts to individual American badgers for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual American badgers occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 (increased human activity, noise, vibration, and lighting) because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as increased human activity, habitat fragmentation, traffic collisions, lighting, and rodenticides. The loss or degradation of suitable habitat and impacts to individual American badgers due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to American badger: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur if natal dens are disturbed during construction, including direct destruction of dens from vegetation clearing and grading that could result in injury or mortality of individuals from direct contact with equipment or entombment or as result of behavioral disturbances due to increased human activity, noise, ground vibration, and lighting. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted to identify and relocate American badgers. Natal dens will be protected by prohibiting construction within 100 feet of the disturbance zone until young are no longer dependent on the natal den. Biological monitoring will be conducted during initial vegetation clearing and grading and during periods when construction activities will occur near occupied natal dens to ensure that no impacts to the natal dens occur.

The combined permanent loss of suitable habitat for the American badger resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,630 acres (28.8%) under Alternative 7 to 3,995 acres (43.8%) under Alternative 2. This would be a substantial loss of suitable habitat and will reduce the size and distribution of the American badger population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the American badger in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 3,540 acres of suitable habitat for this species. This open space will be conserved

in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, American badgers occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and lighting which may alter their behavioral patterns and reduce reproductive success. Females with young may become agitated and attempt to defend the natal den. The pre-construction surveys, protection of natal dens with young, and biological monitoring during vegetation clearing and grading, as well as controls on lighting, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation, increased human activity, pet, stray, and feral dogs, lighting, and use of rodenticides. The large open space system will provide adequate protected open space that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting will be downcast away from open space areas. Rodenticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for American badger are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-102 IMPACTS TO INDIVIDUALS – AMERICAN BADGER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate impacts to American badger individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three additional mitigation measures to reduce impacts to American badger individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-41 requires pre-construction surveys for the American badger. If American badgers are present, occupied habitat shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den. Occupied maternity dens shall be avoided during the pup-rearing season (February 15 through July 1) and a minimum 200-foot buffer shall be established. This buffer may be reduced upon consultation with CDFG. Maternity dens shall be flagged for avoidance and identified on construction maps. A qualified biologist shall be present. If avoidance of a non-maternity den is not feasible, badgers shall be relocated by trapping or excavation before or after the pup-rearing season. A written report documenting the badger removal shall be provided to CDFG within 30 days of relocation.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to American badger individuals would be avoided and minimized to the extent feasible, and thus would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-103 LOSS OF HABITAT – AMERICAN BADGER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the loss of habitat for the American badger. These mitigation measures primarily relate to habitat protection, restoration, and management in the River Corridor SMA and High Country SMA. Although this species primarily uses grassland, agriculture, and scrub habitats; protection, restoration, and management of habitats in these areas will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial and wash habitats that are used by the American badger. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the American badger that relate to habitat restoration in the River Corridor SMA, High Country SMA, and Salt Creek area and preservation of habitat in the Salt Creek area

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to

construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

These measures will minimize and mitigate impacts to the American badger by preserving a large amount of suitable habitat in the three interconnected preserve areas: the High Country SMA, Salt Creek area, and River Corridor SMA.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for American badger would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-104 SECONDARY IMPACTS – AMERICAN BADGER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the American badger, including short-term construction impacts (human activity, noise, vibration, lighting) and long-term effects due to factors such as habitat fragmentation, increased traffic volumes on existing roads (*e.g.*, SR-126), lighting, and increased human activity.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will mitigate for habitat fragmentation and increased long-term human activity through protection, restoration, enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.39, described below, will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to American badger habitat associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system, prohibiting pets (with the exception of horses on established trails), hunting, fishing, and motor or off-trail bike riding, and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures that will address secondary effects such as increased human activity; potential harassment by humans and pet, stray, and feral dogs;

increased vehicle collisions; and the use of rodenticides that could result in accidental poisoning and reduction of the rodent prey base

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, refer to restoration and/or preservation of habitat in the River Corridor SMA and High Country SMA.

BIO-41, BIO-52, and BIO-58, as described above, refer to pre-construction surveys that would identify any American badger natal dens within 100 feet of construction zones and measures that will ensure that natal dens and the activities of breeding females are not affected.

In addition, BIO-63, BIO-69, and BIO-73, described below, will be implemented to mitigate for increased human activity and pet, stray, and feral dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-59 specifies that a wildlife movement corridor plan shall be prepared and implemented. The plan will include design criteria for road crossings and methods to encourage passage, such as lighting, bubblers, and vegetation planting. Road crossings will be designed to accommodate mountain lions and mule deer and will function for American badger as well. Signs shall be installed along roadways, indicating potential wildlife crossings where mountain lions and mule deer are likely to cross in order to reduce vehicle collisions for wildlife in general.

BIO-64 will be implemented to prevent secondary poisoning and requires preparation of an integrated pest management (IPM) plan controlling the use of rodenticides on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to populations of the American badger and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SAN DIEGO BLACK-TAILED JACKRABBIT (CSC)

Life History

The black-tailed jackrabbit (*Lepus californicus*) is widespread throughout the western United States, west from central Missouri and Arkansas, and ranges south into central Mexico (Hall 1981). It is absent only from the higher elevations of the Rocky Mountains, the Sierra Nevada, and the Cascades (Hall 1981). The subspecies San Diego black-tailed jackrabbit (*L. c. bennettii*), which is one of nine subspecies of black-tailed jackrabbit (Dunn *et al*. 1982), is confined to coastal southern California, with marginal records being Mt. Pinos in northeastern Ventura County, Arroyo Seco/Pasadena in Los Angeles County, and the San Felipe Valley and Jacumba in San Diego County (Hall 1981).

The black-tailed jackrabbit occupies many diverse habitats, but primarily is found in arid regions supporting short-grass habitats. Black-tailed jackrabbits are typically not found in high grass or dense brush where it is difficult for them to move freely, and the openness of open scrub habitat is probably preferred over dense chaparral. Black-tailed jackrabbits are common in grasslands that are overgrazed by cattle, and they are well adapted to using low-intensity agricultural habitats (Lechleitner 1959).

Black-tailed jackrabbits are considered generalist herbivores (Johnson and Anderson 1984). In semi-desert and desert rangelands in New Mexico, Nevada, and Idaho, for example, grasses and forbs are the largest components of their diet, with shrubs less important (Johnson and Anderson 1984; Hayden 1966; Wansi *et al.* 1992). However, their diet shifts between season, locations, years, and vegetation types, suggesting that jackrabbits are opportunistic foragers.

Typical dispersal distances may be relatively short, but black-tailed jackrabbits are capable of dispersing long distances. Most recorded dispersal distances are less than 0.25 mile, but a juvenile was observed to disperse 28 miles in 17 weeks (French *et al.* 1965). Most seasonal movements involve short distances and may be related to food availability (Bronson and Tiemeir 1959). Recorded home ranges of the black-tailed jackrabbit typically range from 16 to 300 hectares (49 to 346 acres) (Best 1996; French *et al.* 1965; Smith 1990).

Breeding by black-tailed jackrabbits can occur throughout the year, but shows stronger seasonality in some regions, with more northern latitudes exhibiting shorter, distinct seasons (Bronson and Tiemeir 1958; Feldhamer 1979; Wagner and Stoddart 1972). In Butte County, California, Lechleitner (1959) observed slight seasonality, and found reproductive males and young in every month of the year. Females in his study area were pregnant every month, but showed a peak pregnancy period from January to August. Young are not well-coordinated until they are two to three days old and keep close to the nest during this period (Best 1996).

The San Diego black-tailed jackrabbit is particularly sensitive to habitat fragmentation and isolation of populations. Because local populations fluctuate in relation to resources, it may disappear from a location when the size of the habitat patch declines to some critical point no longer large enough to sustain a population or the patch becomes too isolated from other occupied habitat for successful dispersal to the site. Other documented threats to jackrabbits related to urban development area vehicle collisions and pet, stray, and feral dogs (Lechleitner 1958). Inadvertent poisoning from rodenticides used to control pest rodents (*e.g.*, ground squirrels) in landscaped areas and golf courses is also a threat to the species.

Survey Results

Systematic surveys of the Project area have not been conducted, and the San Diego black-tailed jackrabbit has been only anecdotally observed. It was observed by Impact Sciences (2005) during mammal surveys; it has not been observed in several other general wildlife surveys, including those by Haglund and Baskin (2000) in the Santa Clara River corridor at I-5; by Dudek in the High Country SMA and Salt Creek area (Dudek and Associates 2006B), the VCC planning area (Dudek and Associates 2006D), and the Entrada planning area (Dudek and Associates 2006E); and by Compliance Biology (2006D) on the Castaic Mesa project site. The lack of observations of San Diego black-tailed jackrabbits indicates that this species is uncommon in the Project area. However, based on the Impact Sciences (2005) report of the subspecies in the Project area, it is assumed that the San Diego black-tailed jackrabbit potentially occurs in suitable habitat throughout the site. The lack of specification for locations in the Project area for the San Diego black-tailed jackrabbit in the Impact Sciences (2005) report is relatively unimportant because of the shifting nature of the species' habitat use of areas in relation to the abundance and distribution of resources (*e.g.*, Bronson and Tiemeir 1959; French *et al.* 1965; Johnson and Anderson 1984). For example, a high concentration of San Diego black-tailed jackrabbits in a particular area in 2004 when the Impact Sciences (2005) study was conducted may bear little relationship to San Diego black-tailed jackrabbit use of the Project area over a longer period of time or under different resource conditions.

Suitable habitat for the San Diego black-tailed jackrabbit in the Project area includes agriculture, alluvial scrub, big sagebrush scrub, California sagebrush scrub and associations, California sagebrush–black sage, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral, California annual grassland, big sagebrush–California buckwheat, purple needlegrass, river wash, and valley oak/grass. A total of 9,131 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 216 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.4% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A total of 123 acres would be directly temporarily impacted.

The San Diego black-tailed jackrabbit is still widespread and relatively common and forages and breeds in a broad variety of habitats that comprise more than 9,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 216 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,779 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 41.4% of the habitat on

site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat).

Although the San Diego black-tailed jackrabbit is still widespread and relatively common, a relatively large amount and percentage of on-site habitats for the San Diego black-tailed jackrabbit would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 41.4% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,995 acres (43.8%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the San Diego black-tailed jackrabbit on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Adult San Diego black-tailed jackrabbits are highly mobile and probably could escape from construction and/or grading activities. This species is adapted to shifting its habitat use in response to changing conditions, and adults should be relatively unaffected by construction activities. However, construction activities could result in destruction of natal sites (dens, burrows, and depressions), and mortality of young, which are not well coordinated for the first two or three days after birth and are dependent on the nest. Abandonment of the natal den by the mother could also result in the mortality of young. Implementation of the SCP would not directly impact this species. Because the black-tailed jackrabbit is uncommon on site, and individuals, particularly young, could be injured or killed during construction and/or grading activities, any loss of individuals would have a substantial adverse effect on a special-status species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent and temporary impacts to individuals in that young could be injured or killed during construction and/or grading activities. This risk is greater for the build-out of the Specific Plan, VCC, and Entrada planning areas because of the much larger area of impact to suitable habitat. Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect San Diego black-tailed jackrabbits in areas adjacent to construction zones. These impacts could include short-term disruptions to essential behavioral activities (*e.g.*, foraging, breeding, and rearing of young) as a result of increased human activity, noise, vibration, and nighttime illumination. Flushed adult females could abandon newborns, resulting in their mortality. Implementation of the SCP would not affect this species.

Potential long-term development-related secondary impacts associated with use of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas include habitat fragmentation and population isolation; increased risk of vehicle collisions as a result of new roads and increased traffic volumes on existing roads (*e.g.*, SR-126); nighttime illumination; increased human activity and potential harassment by humans and pet, stray, and feral cats and dogs; and the use of pesticides (including rodenticides), which could result in accidental poisoning. These secondary impacts would permanently reduce the number of San Diego black-tailed jackrabbits that may occur along the urban–open space edge, interfere with the movement of the species in the Project vicinity, and contribute to the reduction of the range and distribution of the species in the Project area (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the San Diego black-tailed jackrabbit (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 195 acres (2.1%) of permanent loss and 160 acres of temporary loss;
- Alternative 4 – 186 acres (2.0%) of permanent loss and 162 acres of temporary loss;
- Alternative 5 – 223 acres (2.4%) of permanent loss and 156 acres of temporary loss;
- Alternative 6 – 209 acres (2.3%) of permanent loss and 161 acres of temporary loss; and
- Alternative 7 – 94 acres (1.0%) of permanent loss and 411 acres of temporary loss.

Compared to Alternative 2, which would result in 216 acres (2.4%) of permanent loss and 123 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat less overall and the permanent loss of habitat under Alternatives 5 and 6 would not be substantially different. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat greater overall. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in reduced permanent impacts and greater temporary impacts to suitable habitat for the San Diego black-tailed jackrabbit compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, and because the San Diego black-tailed jackrabbit can use a variety of upland habitats in the Project area, the impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the San Diego black-tailed jackrabbit (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 3,568 acres (39.1%) of permanent loss;
- Alternative 4 – 3,436 acres (37.6%) of permanent loss;
- Alternative 5 – 3,350 acres (36.7%) of permanent loss;

- Alternative 6 – 2,967 acres (32.5%) of permanent loss; and
- Alternative 7 – 2,537 acres (27.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,779 acres (41.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in reduced impacts to suitable habitat for the San Diego black-tailed jackrabbit compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large amount and percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the San Diego black-tailed jackrabbit occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the San Diego black-tailed jackrabbit:

- Alternative 3 – 3,764 acres (41.2%) of permanent loss;
- Alternative 4 – 3,623 acres (39.7%) of permanent loss;
- Alternative 5 – 3,573 acres (39.1%) of permanent loss;
- Alternative 6 – 3,176 acres (34.8%) of permanent loss; and
- Alternative 7 – 2,630 acres (28.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,995 acres (43.8%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7. There would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara

River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for the San Diego black-tailed jackrabbit compared to the other alternatives.

Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the San Diego black-tailed jackrabbit occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual San Diego black-tailed jackrabbits as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The main risk to San Diego black-tailed jackrabbit individuals is mortality of newborns at natal sites (dens, burrows, or depressions) either as a result of direct destruction of the den or abandonment by the mother. Therefore, impacts to individual San Diego black-tailed jackrabbits occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction-related impacts (increased human activity, noise, vibration, lighting) and long-term effects due to factors such as increased human activity, increased incidence of traffic collisions, lighting, and rodenticides. Therefore, the loss or degradation of suitable habitat and the impacts to individual San Diego black-tailed jackrabbits due to short-term and long-term secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to the San Diego black-tailed jackrabbit: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur if natal dens are disturbed during construction, including direct destruction of dens from vegetation clearing and grading that could result in injury or mortality of young from direct contact with equipment or as a result of behavioral disturbances due to increased human activity, noise, ground vibration, and lighting. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted to identify and relocate San Diego black-tailed jackrabbits. Biological monitoring will be conducted during initial vegetation clearing and grading.

The combined permanent loss of suitable habitat for the San Diego black-tailed jackrabbit resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from **2,630** acres (**28.8**%) under Alternative 7 to 3,995 acres (43.8%) under Alternative 2. This would be a substantial loss of suitable habitat and will reduce the size and distribution of the San Diego black-tailed jackrabbit population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the San Diego black-tailed jackrabbit in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 3,540 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, San Diego black-tailed jackrabbits occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and lighting, which may alter their behavioral patterns and reduce reproductive success. Females with young may abandon the natal den, resulting in mortality of the young. The pre-construction surveys and biological monitoring during vegetation clearing and grading, as well as controls on lighting, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity; pet, stray, and feral cats and dogs; lighting; and use of rodenticides. The large open space system will provide adequate protected open space that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting will be downcast away from open space areas.

Rodenticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for the San Diego black-tailed jackrabbit are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-105 IMPACTS TO INDIVIDUALS – SAN DIEGO BLACK-TAILED JACKRABBIT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate impacts to San Diego black-tailed jackrabbit individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to San Diego black-tailed jackrabbit individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with the contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-58 requires a survey within the proposed disturbance area to identify, flush, capture, and relocate San Diego black-tailed jackrabbits 30 days prior to construction in suitable habitats. If San Diego black-tailed jackrabbits are present, non-breeding rabbits would be flushed from areas to be disturbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged, and

ground-disturbing activities shall be avoided within a minimum of 200 feet during the pup rearing season (February 15 through July 1). This buffer may be reduced based on the location of the den upon consultation with CDFG. Occupied maternity dens, depressions, nests, or burrows shall be flagged for avoidance and a biological monitor shall be present during construction. If unattended young are discovered, they shall be relocated to suitable habitat by a qualified biologist. The applicant shall document all San Diego black-tailed jackrabbit identified, flushed, avoided, or moved and provide a written report to CDFG within 72 hours. Capture and relocation of animals shall only be conducted by biologists with the proper scientific collection and handling permits.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to San Diego black-tailed jackrabbit individuals will be avoided and minimized to the extent feasible, and thus would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-106 LOSS OF HABITAT – SAN DIEGO BLACK-TAILED JACKRABBIT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate the loss of habitat for the San Diego black-tailed jackrabbit. These mitigation measures primarily relate to habitat protection, restoration, and management in the River Corridor SMA and High Country SMA. Although this species primarily uses grassland, agriculture, and scrub habitats, protection, restoration, and management of habitats in these areas will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 address habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial and wash habitats that are used by the San Diego black-tailed jackrabbit. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes,

other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the San Diego black-tailed jackrabbit that relate to habitat restoration in the River Corridor SMA, High Country SMA, and Salt Creek area and preservation of habitat in the Salt Creek area.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

These measures will minimize and mitigate impacts to the San Diego black-tailed jackrabbit by preserving a large amount of suitable habitat in the three interconnected preserve areas: the High Country SMA, Salt Creek area, and River Corridor SMA.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for San Diego black-tailed jackrabbit would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-107 SECONDARY IMPACTS – SAN DIEGO BLACK-TAILED JACKRABBIT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the San Diego black-tailed jackrabbit, including short-term construction-related impacts (human activity, noise, vibration, lighting) and long-term effects due to factors such as habitat fragmentation, increased traffic volumes on existing roads (*e.g.*, SR-126), nighttime lighting, increased human activity, and rodenticides.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will mitigate for habitat fragmentation and increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to San Diego black-tailed jackrabbit habitat associated with grazing and increased human activity.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails), hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 requires that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that will address secondary effects, such as increased human activity; potential harassment by humans and pet, stray, and feral dogs; increased incidence of vehicle collisions; and the use of pesticides (including rodenticides), which could result in accidental poisoning.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, refer to restoration and/or preservation of habitat in the River Corridor SMA and High Country SMA.

BIO-52 and BIO-58, as described above, refer to pre-construction coordination and surveys that will avoid and minimize impacts to San Diego black-tailed jackrabbit.

In addition, BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-59 specifies that a wildlife movement corridor plan shall be prepared and implemented. The plan will include design criteria for road crossings and methods to encourage passage, such as lighting, bubblers, and vegetation planting. Road crossings will be designed to accommodate mountain lions and mule deer and will function for San Diego black-tailed jackrabbit as well. Signs shall be installed along roadways, indicating potential wildlife crossings where mountain lions and mule deer are likely to cross in order to reduce vehicle collisions for wildlife in general.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to any populations of the San Diego black-tailed jackrabbit and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

MONARCH BUTTERFLY (WINTERING SITES) (CALIFORNIA SPECIAL ANIMAL)

Life History

The monarch butterfly (*Danaus plexippus*) follows a pattern of seasonal migration. The summer grounds of the species are found in New England, the Great Lakes region, and the northern Rocky Mountains; these areas are occupied from May through late August to mid-September (Urquhart 1987). The New England and Great Lakes populations migrate southwest to wintering grounds in the Sierra Madre mountain range of Mexico. The Rocky Mountains population migrates southwest to wintering grounds along the California coast.

The species' distribution is controlled by the distribution of its larval host plant (*i.e.*, various milkweeds, genus *Asclepias*). Eggs are deposited and hatch on the underside of leaves of the milkweed plant. Upon hatching, the larva will feed upon the fine hairs on the leaves of the plant and stay on the same plant throughout its molting stages. After molting, the larva will leave the milkweed and construct its chrysalis elsewhere. However, once an adult monarch butterfly emerges from the chrysalis, it will soon return to a milkweed plant for foraging and shelter (Urquhart 1987).

Monarch butterfly wintering sites are considered special status by CDFG. Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast. A few California sites (*e.g.*, Pacific Grove and Natural Bridges) support concentrated numbers of overwintering adults, but adults often winter as scattered individuals or in small clusters (Emmel and Emmel 1973). No wintering sites are known from the Santa Clarita Valley.

Sexually mature monarch butterflies mate along their northern migratory route (while returning to their summer grounds) and deposit eggs on milkweed plants. Adults die shortly after mating and laying eggs, leaving the completion of the northern migration to their offspring.

Existing and potential overwintering sites along the southern California coast supporting large eucalyptus and/or pine trees are important for the long-term survival of western United States monarch populations (Compliance Biology 2004A). When monarch butterflies are concentrated in wintering areas, the colony is particularly vulnerable to threats. In addition to the direct loss of tree groves used as wintering sites, wintering monarch butterflies are vulnerable to several effects related to construction activities and urbanization. Excessive fugitive dust, noise, and ground vibrations associated with construction activities near wintering grounds could disrupt wintering behavior and result in the abandonment of winter roost sites. Additionally, tree groves used as wintering sites could be subject to a higher fire risk from nearby development or to adverse affects from increased light and glare.

Survey Results

Focused surveys for monarch butterflies and their wintering sites have not been conducted on the RMDP site. However, focused surveys for San Emigdio blue butterfly were conducted throughout the RMDP site and the Entrada planning area in April and May 2004 and in Salt Creek Canyon (which is within the High Country SMA) and Potrero Canyon (which is in the Specific Plan area of the RMDP site) in April and May 2005 (Compliance Biology 2004A, 2004B, 2004C, 2005). These surveys included conducting an inventory of all butterfly species observed.

Individual monarch butterflies were observed during these surveys as well as during various other wildlife and plant surveys that have been conducted. However, due to the site's distance from the coast, it is unlikely that the Project area would be used by large numbers of overwintering adults (Compliance Biology 2004A). Milkweed plants present on the Project site may be used as oviposition sites by passing females while returning to summer grounds. Both California milkweed (*Asclepias californica*) and narrow-leaf milkweed (*Asclepias fascicularis*) have been observed on site. Because milkweed plants occur as an occasional component of various upland vegetation communities on site, potential habitat acreage was not calculated for this species.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Due to the Project area's distance from the coast, it is unlikely that it would be used by a large number of overwintering adults (Compliance Biology 2004A). Therefore, the occurrence of monarch butterflies in the Project area is expected to be limited to individual butterflies passing across the site during migration.

Vegetation clearing could result in the loss of milkweed plants, the host plants for monarch butterfly eggs or larvae. Milkweeds are widespread and are not considered

special status by CDFG. No wintering sites are expected to occur on the Project site. In addition, monarch butterfly populations in California appear to be stable (Compliance Biology 2004A). This impact would not result in a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

Due to the Project site's distance from the coast, it is unlikely that it would be used by a large number of overwintering adults (Compliance Biology 2004A). Therefore, the occurrence of monarch butterflies on the Project site is expected to be limited to individual butterflies passing across the site during migration.

The status of the monarch butterfly as a California Special Animal is associated with wintering sites (CDFG 2008C); wintering sites are not expected to occur on the Project site. As milkweeds are widespread and monarch butterfly populations appear to be stable (Compliance Biology 2004A), occurrences of the species host plant are not considered special status. Therefore, this impact would not result in a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas could result in the loss of milkweed plants, the host plants for monarch butterfly eggs or larvae. Milkweeds are widespread and are not considered special status by CDFG. No wintering sites are expected to occur on the Project site. In addition, monarch butterfly populations in California appear to be stable (Compliance Biology 2004A). This impact would not result in a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide;

threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Monarch butterflies are highly mobile, and it is not expected that construction activities associated with the implementation of the RMDP and the SCP would result in the loss of any adults of the species. However, female adult monarch butterflies could deposit eggs on milkweed plants on the Project site during their northern migration. These eggs and larvae would be susceptible to loss or harm during vegetation clearing.

Due to the Project site's distance from the coast, it is unlikely that it would be used by a large number of overwintering adults (Compliance Biology 2004A). Therefore, construction activities associated with the implementation of the RMDP and the SCP would not be expected to result in the loss of individual monarch butterflies at a wintering site. However, milkweed plants on the Project site could be removed during vegetation clearing, which could result in the loss of eggs and larvae. This impact would not have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss of individual monarch butterflies occurring as a result of implementation of the RMDP and the SCP under Alternative 2 therefore would be adverse but not significant.

Indirect Permanent Impacts

As discussed above, monarch butterflies are highly mobile, and it is not expected that construction activities associated with the implementation of the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of any adults of the species, or loss of a wintering site. However, female adult monarch butterflies could deposit eggs on milkweed plants on the Project site during their northern migration. These eggs and larvae would be susceptible to loss or harm during vegetation clearing. Milkweed plants on the Project site could be removed during vegetation clearing, which could result in the loss of eggs and larvae. This impact would not have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of nursery sites; have the potential to substantially reduce the habitat of

the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss of individual monarch butterflies occurring as a result of implementation of the build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternative 2 therefore would be adverse but not significant.

Secondary Impacts

Due to the Project site's distance from the coast, it is unlikely that it would be used by a large number of overwintering adults (Compliance Biology 2004A). As wintering sites are not expected to occur, no secondary impacts to these sensitive habitats associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas are anticipated. Short-term impacts associated with the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, such as fugitive dust, could interfere with larval development on milkweeds. However, monarch butterfly populations are known to be stable statewide and larval host plant habitat is not considered to be special status by CDFG, given the widespread distribution of suitable plants. Because the occurrence of monarch butterflies on the Project site is expected to be limited to individual butterflies passing across the site during migration, long-term impacts associated with the proposed development are not anticipated to affect this species.

Short-term and long-term secondary impacts would not have a substantial adverse effect on the species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1 and 7). Secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

The potential for loss of habitat for monarch butterfly as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Therefore, the loss of habitat for monarch butterfly occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for loss of individual monarch butterflies as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Therefore, the loss of individual monarch butterflies occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Secondary Impacts

Secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activity effects, such as fugitive dust, which could interfere with larval development on milkweeds. Because the occurrence of monarch butterflies on the Project site is expected to be limited to individual butterflies passing across the site during migration, long-term impacts associated with the proposed development alternatives are not anticipated to affect this species. Therefore, the loss or degradation of suitable habitat and the loss of individual monarch butterflies due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Mitigation Strategy and Summary

This species would not be subject to significant direct, indirect, or secondary impacts from the proposed Project. Although no mitigation is required, the monarch butterfly will benefit from previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that, at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

SAN EMIGDIO BLUE BUTTERFLY (CALIFORNIA SPECIAL ANIMAL)

Life History

The San Emigdio blue butterfly (*Plebulina emigdionis*) is restricted to southern California in lower Sonoran and riparian habitats from the Owens Valley south to the Mojave River, and west to northern Ventura and Los Angeles Counties. The primary location where this species has been collected is along the Mojave River near Victorville, but isolated colonies have been reported in Bouquet and Mint canyons near Castaic, in canyons along the north side of the San Gabriel Mountains near the desert's edge, and in arid areas south of Mount Abel near San Emigdio Mesa (Emmel and Emmel 1973; Murphy 1990). This butterfly can be locally abundant in association with its primary host plant, four-wing saltbush (*Atriplex canescens*), but has also been observed in association with quail brush (*A. lentiformis*) (Compliance Biology 2004C, 2005).

Although its primary host plant is widespread throughout the western United States, the distribution of the San Emigdio blue butterfly is much more localized, suggesting that other factors may determine habitat suitability (Murphy 1990). For example, habitat suitability may, at least in part, be attributed to a suspected symbiotic relationship with at least one ant species, *Formica pilicornis* (Ballmer and Pratt 1991). These ants presumably extract droplets containing glucose and amino acids from the nectary glands of San Emigdio blue butterfly larvae and provide the butterfly larvae protection from predators.

San Emigdio blue butterfly adults are active from late April to early September. The species can have up to three broods per year, with the first brood generally occurring in late April to May, the second brood in late June to early July, and the third brood in August to early September (Emmel and Emmel 1973). Adults are generally observed perching on their host plant or other plants in the immediate vicinity, and nectaring on nearby flowers.

The San Emigdio blue butterfly has a limited distribution and often occurs in small, isolated colonies. These characteristics make colonies vulnerable to direct and indirect habitat disturbance, given the limited extent of occupied habitat and limited potential for recolonization. Many colonies in the Mojave Desert and Owens Valley are isolated from anthropogenic disturbances, but other colonies found closer to growing urban areas may be situated near major roads, railroad tracks, and other developments, which may contribute to further decline (Compliance Biology 2005).

Survey Results

Focused surveys for San Emigdio blue butterfly were conducted throughout the Specific Plan and Entrada planning areas in April and May 2004 and in Salt Creek Canyon (which is within the High Country SMA) and Potrero Canyon (which is in the Specific Plan area) in April and

May 2005 (Compliance Biology 2004A, 2004B, 2004C, 2005). The primary objectives of the surveys were to determine the presence or absence of San Emigdio blue butterfly, to identify the locations of any colonies present, and to identify all areas containing potentially suitable habitat (*i.e.*, adequately sized clusters of the host plant). A general butterfly inventory was also conducted. Collectively, the surveys included all areas of potentially suitable habitat in the Specific Plan and Entrada planning areas as well as a small portion of the High Country SMA.

During the 2004 surveys, San Emigdio blue butterfly was documented within the Specific Plan area in the west-central edge of Potrero Canyon (**Figure 4.5-132**, Potrero Canyon San Emigdio Blue Butterfly, and **Figure 4.5-6**, RMDP/SCP—Special-Status Wildlife Species Occurrences) (Compliance Biology 2004C). During the 2005 surveys, five adult San Emigdio blue butterflies were again observed at this location. One San Emigdio blue butterfly was also observed in the High Country SMA at the northwestern edge of Salt Creek Canyon during the 2005 surveys (**Figure 4.5-6**) (Compliance Biology 2005).

The butterfly surveys described above identified patches of quail brush that were observed within San Martinez Grande Canyon on the north side of SR-126 in 2004 and within Salt Creek Canyon in the High Country SMA in 2005.

Focused surveys for San Emigdio blue butterfly have not been conducted within the VCC planning area. Both four-wing saltbush and quail brush have been observed within the VCC planning area, but their occurrence was restricted to individual plants or small clusters of plants (Miller 2007). However, because neither a focused habitat evaluation nor focused surveys for San Emigdio blue butterfly have been conducted within the VCC planning area, the potential for the species to occur there cannot be ruled out.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Colonies of San Emigdio blue butterfly are dependent on the presence of the host plants and, potentially, other environmental factors (*e.g.*, the presence of the ant *Formica pilicornis*). While the species' primary host plant is four-wing saltbush, it occurs in association with quail brush on the Project site. Vegetation clearing associated with construction of RMDP facilities would result in the removal of quail brush plants associated with the colony that occurs outside the Potrero Preserve Area and fence construction could result in the removal of quail brush plants around the Potrero Preserve Area in accordance with the SCP (**Figure 4.5-133**, Alternative 2 Impacts to Potrero Canyon San Emigdio Blue Butterfly). The extent of quail brush within or immediately adjacent to Salt Creek Canyon wash could expand and potentially provide suitable habitat for the San Emigdio blue butterfly in future years. While Salt Creek Canyon is within the High Country SMA and will be protected in perpetuity by a conservation easement, some bank stabilization would occur along portions of Salt Creek Canyon wash through implementation of the RMDP that could result in the loss of potential habitat.

Given that only one San Emigdio blue butterfly colony is known to occur on the site, the loss of habitat at the one known colony on site would have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss would be mitigated in part through replacement of quail brush within the colony at a 1.5:1 ratio. That portion of the San Emigdio blue butterfly habitat within the Potrero Preserve Area and the adjacent Open Area, and the potential habitat in Salt Creek Canyon, would be monitored and managed as described below. Even with replacement, preservation, and management as proposed, direct permanent and temporary impacts (Loss of Habitat) would be significant and unavoidable.

Indirect Permanent Impacts

Vegetation clearing associated with build-out of the Specific Plan area would result in the removal of quail brush plants associated with the colony that occurs outside the Potrero Preserve Area (**Figure 4.5-133**, Alternative 2 Impacts to Potrero Canyon San Emigdio Blue Butterfly). The remainder of the San Emigdio blue butterfly colony not impacted by the RMDP or Specific Plan area build-out is located within a designated Open Area

and partially within the proposed Potrero Preserve Area. Patches of quail brush of adequate size to support San Emigdio blue butterfly were identified in San Martinez Grande Canyon in areas that would be impacted, but no butterflies were observed at these locations during the 2004 surveys. No other patches of quail brush of adequate size to support San Emigdio blue butterfly were identified during these surveys (Compliance Biology 2004A, 2004B, 2004C).

Quail brush plants would be removed from portions of the Project site, but these areas were not found to support the San Emigdio blue butterfly (Compliance Biology 2004A, 2004B, 2004C, 2005). Additionally, areas of potentially suitable habitat would be preserved in the Salt Creek area within the High Country SMA. Given that only one San Emigdio blue butterfly colony is known to occur on the site, the loss of habitat at the one known colony on site could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss would be mitigated in part through replacement of quail brush within the colony at a 1.5:1 ratio. That portion of the San Emigdio blue butterfly habitat within the Potrero Preserve Area and the adjacent Open Area, and the potential habitat in Salt Creek Canyon, would be monitored and managed as described below. Even with replacement, preservation and management as proposed, direct permanent and temporary impacts (Loss of Habitat) would be significant and unavoidable.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could result in the loss of quail brush plants, the host plants for San Emigdio blue butterfly eggs or larvae. Given that only one San Emigdio blue butterfly colony is known to occur on the site, the loss of habitat at the one known colony on site could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss would be mitigated in part through replacement of quail brush within the colony at a 1:5:1 ratio. That portion of the San Emigdio blue butterfly habitat within the Potrero Preserve Area and the adjacent Open Area, and the potential habitat in Salt Creek Canyon, would be monitored and managed

as described below. Even with replacement, preservation and management as proposed, the combined direct and indirect permanent impacts (Loss of Habitat) would be significant and unavoidable.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Construction and vegetation clearing activities associated with the implementation of the RMDP and the SCP would result in the loss of San Emigdio blue butterfly adults, eggs, or larvae occurring on quail brush plants (**Figure 4.5-133**, Alternative 2 Impacts to Potrero Canyon San Emigdio Blue Butterfly). Given that only one San Emigdio blue butterfly colony is known to occur on the site, the potential direct loss of eggs and larvae could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss would be mitigated in part through limiting the removal of quail brush plants from the San Emigdio blue butterfly colony in Potrero Canyon to periods when eggs and larvae are not present, and through replacement of quail brush within the colony at a 1:5:1 ratio. That portion of the San Emigdio blue butterfly habitat within the Potrero Preserve Area and the adjacent Open Area, and the potential habitat in Salt Creek Canyon, would be monitored and managed as described below. Even with avoidance, replacement, preservation, and management as proposed, the loss of individual San Emidgio blue butterflies occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2 would be significant and unavoidable, absent further mitigation.

Indirect Permanent Impacts

Construction and vegetation clearing activities associated with the implementation of the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of San Emigdio blue butterfly adults, eggs, or larvae occurring on quail brush plants (**Figure 4.5-133**, Alternative 2 Impacts to Potrero Canyon San Emigdio Blue Butterfly). Given that only one San Emigdio blue butterfly colony is known to occur on the site, the potential indirect loss of eggs and larvae could have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number

or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). The loss would be mitigated in part through limiting the removal of quail brush plants from the San Emigdio blue butterfly colony in Potrero Canyon to periods when eggs and larvae are not present, and through replacement of quail brush within the colony at a 1:5:1 ratio. That portion of the San Emigdio blue butterfly habitat within the Potrero Preserve Area and the adjacent Open Area, and the potential habitat in Salt Creek Canyon, would be monitored and managed as described below. Even with avoidance, replacement, preservation, and management as proposed, the loss of individual San Emidgio blue butterflies occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternative 2 would be significant and unavoidable.

Secondary Impacts

Secondary impacts to the San Emigdio blue butterfly colony could result from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Short-term construction-related secondary impacts include vegetation clearing, trampling, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology. Long-term secondary impacts include intrusion by non-native species, human disturbance, increased fire frequency, isolation of the San Emigdio blue butterfly colony, and use of the proposed road. Therefore, secondary impacts associated with the proposed Project could have a substantial adverse effect on the species; interfere substantially with the movement of the species or impede the use of a native wildlife nursery site; substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide (significance criteria 1, 4, and 7). These secondary impacts would be mitigated in part through avoidance measures and management and monitoring of Open Space areas, the spineflower Potrero Preserve, and the High Country SMA. Even with avoidance, preservation and management as proposed, secondary impacts of Alternative 2 associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be significant and unavoidable.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

The loss of habitat for San Emigdio blue butterfly as a result of implementation of the RMDP under Alternatives 3 through 7 would be somewhat less compared to Alternative 2. These differences are primarily due to the avoidance of impacts to the Potrero Canyon drainage compared to Alternative 2 (**Figures 4.5-134** through **4.5-138,** Alternatives 3

through 7 Impacts to Potrero Canyon San Emigdio Blue Butterfly). These differences are related to the construction of grade control structures and the placement of buried bank stabilization within and adjacent to lower Potrero Canyon Creek, which would be limited to the eastern edge of the butterfly colony. Alternatives 3 and 4 only remove butterfly habitat as a result of the construction of grade control structures. Alternatives 5, 6, and 7 have habitat impacts due to buried bank stabilization as well. Vegetation clearing associated with construction of RMDP facilities and fence construction around the Potrero Preserve Area in accordance with the SCP would result in the removal of quail brush plants associated with the colony that occurs outside the spineflower preserve boundary, but these impacts would be reduced compared to Alternative 2.

Therefore, the direct loss of habitat for San Emigdio blue butterfly occurring as a result of implementation of the RMDP and the SCP and Specific Plan build-out under Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

The loss of habitat for San Emigdio blue butterfly as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 6 would be somewhat less compared to Alternative 2. These differences are primarily due to the successively reduced footprints of Alternatives 3 through 7 (**Figures 4.5-134** through **4.5-138,** Alternatives 3 through 7 Impacts to Potrero Canyon San Emigdio Blue Butterfly). Under Alternatives 5 and 6, vegetation clearing associated with Specific Plan build-out would result in the removal of quail brush plants associated with the colony that occurs outside the spineflower preserve boundary, but these combined direct and indirect impacts would be reduced compared to Alternative 2. Under Alternatives 3, 4, and 7, build-out of the Specific Plan would not result in indirect loss of habitat for San Emigdio blue butterfly.

Therefore, the indirect loss of habitat for San Emigdio blue butterfly occurring as a result of implementation of the RMDP and the SCP and Specific Plan build-out under Alternatives 5 and 6 would be significant, absent mitigation. Under Alternatives 3, 4, and 7, Specific Plan build out would not result in the loss of habitat and therefore no impacts are expected to occur.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would result in the loss of habitat for San Emigdio blue butterfly under Alternatives 3 through 7. These impacts would be reduced compared to Alternative 2. These differences are related to the construction of grade control structures and the placement of

buried bank stabilization within and adjacent to lower Potrero Canyon Creek, which would be limited to the eastern edge of the butterfly colony. Alternatives 3 and 4 only remove butterfly habitat as a result of the construction of grade control structures. Alternatives 5, 6, and 7 have habitat impacts due to buried bank stabilization as well. The combined direct and indirect permanent loss of habitat for San Emigdio blue butterfly occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for loss of individual San Emigdio blue butterflies as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be somewhat less compared to Alternative 2. These differences are primarily due to the avoidance of impacts to the Potrero Canyon drainage compared to Alternative 2 (**Figures 4.5-134** through **4.5-138**, Alternatives 3 through 7 Impacts to Potrero Canyon San Emigdio Blue Butterfly). Construction and vegetation clearing activities would result in the loss of San Emigdio blue butterfly adults, eggs, or larvae occurring on quail brush plants, but these impacts would be reduced compared to Alternative 2.

Therefore, the loss of individual San Emigdio blue butterflies occurring as a result of implementation of the RMDP and the SCP, or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be somewhat less compared to Alternative 2 due to the pullback of development from Potrero Canyon, although each alternative has similar short-term construction activity-related effects, such as vegetation clearing, trampling, exposure to fugitive dust, contact with polluted runoff, and changes in hydrology. Long-term secondary impacts include intrusion by non-native species, human disturbance, increased fire frequency, isolation of the San Emigdio blue butterfly colony, and use of the proposed road in Potrero Canyon (Alternatives 2, 5, and 6 only). Therefore, the loss or degradation of suitable habitat and the loss of individual San Emigdio blue butterflies due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to San Emigdio blue butterfly: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

The San Emigdio blue butterfly colony and associated habitat in Potrero Canyon will largely be preserved within the Potrero Preserve Area and the adjacent Open Area. The portion of the San Emigdio blue butterfly colony not impacted by the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only) and Entrada, is located within the Potrero Preserve Area and the adjacent Open Area. These areas would not be developed. However, vegetation removal from the colony could be required for construction of RMDP facilities RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only) and Entrada, and fence construction related to implementation of the SCP. Vegetation removal from the colony will only be permitted when eggs and larvae of the San Emigdio blue butterfly are not present. Any required removal of quail brush from the colony will be replaced at a 1:5:1 ratio. Additionally, Salt Creek Canyon is located within the High Country SMA; potentially suitable San Emigdio blue butterfly habitat occurs in this location. Further, the River Corridor SMA and High Country SMA will be protected and will continue to provide potentially suitable habitat for the San Emigdio blue butterfly. Additionally, 1,518 acres in the Salt Creek area will be protected and will continue to provide potentially suitable habitat for the San Emigdio blue butterfly.

Short-term secondary impacts, such as hydrologic and biogeochemical alterations, contact with pollutants, and exposure to fugitive dust will be avoided and minimized by providing erosion control plans, dust control plans, an overall Project SWPPP, and other BMPs. Long-term secondary impacts associated with intrusion by non-native species and human disturbance will be addressed by monitoring and management of the spineflower preserve; review of landscaping plans and inspection of plants proposed for planting near the preserve; restricting access to the spineflower preserve; and preparation of a landscaping plan composed of native or non-native, non-invasive plant species. While several of these mitigation measures apply directly to the spineflower preserve, by virtue of its adjacent location, the portion of the San Emigdio blue butterfly colony occurring outside the preserve boundary will also benefit from the measures. Secondary impacts associated with isolation of the San Emigdio blue butterfly colony will be further reduced by the preservation and management of the High Country SMA, River Corridor SMA, and Salt Creek area. These areas provide potentially suitable habitat for the San Emigdio blue butterfly and potential dispersal and movement routes to the north, south, east, and west. Secondary impacts associated with use of the proposed road will be addressed by the monitoring of the Potrero Canyon San Emigdio blue butterfly colony and the implementation of habitat creation/restoration measures should the population decline.

All specific mitigation measures for the San Emigdio blue butterfly are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-108 IMPACTS TO INDIVIDUALS – SAN EMIGDIO BLUE BUTTERFLY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate the loss of San Emigdio blue butterfly individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends one mitigation measure to reduce the loss of San Emigdio blue butterfly individuals.

BIO-65 limits the removal of quail brush plants from the San Emigdio blue butterfly habitat in Potrero Canyon to periods when eggs and larvae are not present.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to San Emigdio blue butterfly individuals under Alternative 2 will remain significant. Implementation of Alternative 2 creates significant unavoidable impacts.

After mitigation, impacts associated with the loss of San Emigdio blue butterfly individuals would be adverse but not significant for Alternatives 3, 4, 5, 6, and 7 because these alternatives would minimize impacts to the colony in Potrero Canyon.

IMPACT 4.5-109 LOSS OF HABITAT – SAN EMIGDIO BLUE BUTTERFLY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that would mitigate the loss of habitat for the San Emigdio blue butterfly.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area mentioned below, these areas will form a large, interconnected open space system that provide potentially suitable habitat for the San Emigdio blue butterfly and potential dispersal and movement routes to the north, south, east, and west (**Figure 4.5-3**).

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the San Emigdio blue butterfly.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. In combination with the River Corridor SMA mentioned above, these areas will form a large, interconnected open space system that provide potentially suitable habitat for the San Emigdio blue butterfly and potential dispersal and movement routes to the north, south, east, and west.

BIO-66 requires that any quail brush plants removed from the San Emigdio blue butterfly habitat in Potrero Canyon be replaced at a minimum 1.5:1 ratio and planted contiguous to the existing colony quail brush plants.

BIO-67 states that prior to any construction activities occurring within 200 feet of the San Emigdio blue butterfly colony in Potrero Canyon, the boundaries of the colony shall be clearly marked with flagging. This will mitigate potential encroachment into the colony.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, loss of habitat for the San Emigdio blue butterfly under Alternative 2 will not be less than significant. Other potentially feasible mitigation measures might include minimizing impacts to the colony in Potrero Canyon, by implementation of Alternatives 3 through 7. Implementation of Alternative 2 creates significant unavoidable impacts, absent further mitigation.

After mitigation, impacts associated with the loss of habitat for the San Emigdio blue butterfly would be adverse but not significant for Alternatives 3, 4, 5, 6, and 7.

IMPACT 4.5-110 SECONDARY IMPACTS – SAN EMIGDIO BLUE BUTTERFLY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that would mitigate for secondary impacts for the San Emigdio blue butterfly.

In order to mitigate impacts from exposure to fugitive dust, contact with polluted runoff, and changes in hydrology, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-55 and

SP-4.6-58, which require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to mitigate impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-33, SP-4.6-49 through SP-4.6-52, and SP-4.6-67, which require the creation and maintenance of fuel modification zones and buffer zones along the boundaries of the High Country SMA, Open Areas, and spineflower preserves.

In order to mitigate impacts from isolation of the colony and vehicle collisions, the Newhall Ranch Specific Plan Program EIR identified SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42, which are summarized above.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate secondary impacts to the San Emigdio blue butterfly from intrusion by non-native species, human disturbance, exposure to fugitive dust, contact with polluted runoff, hydrologic changes, increased fire risk, isolation of the colony, and operation of the proposed road.

In order to mitigate impacts from exposure to fugitive dust, contact with polluted runoff, and changes in hydrology, this EIS/EIR identifies the following mitigation measures.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be used within 100 feet of known special-status plant communities.

In order to mitigate impacts from non-native plant and wildlife species, this EIS/EIR identifies BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to mitigate impacts from construction-related activities, this EIS/EIR identifies BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractors describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In addition, the following mitigation measures will be implemented:

BIO-24 specifies that the applicant's preserve manager(s) and/or natural lands management organization(s) (NLMO(s)) shall manage the spineflower preserves. The proposed preserve manager(s)/NLMO(s) shall be approved by the County and CDFG.

BIO-34 requires plant palettes proposed for use within 100 feet of a spineflower preserve to be reviewed by the spineflower preserve manager or qualified biologist to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants to be installed within 200 feet of the spineflower preserve shall be inspected by the spineflower preserve manager or qualified biologist for the presence of disease, weeds, and pests, including Argentine ants.

BIO-35 through BIO-37 provide guidelines for the installation of permanent fencing and signage for the spineflower preserves. All portions of the spineflower preserves shall be closed with the exception of pre-identified existing dirt roads and utility easements. Fencing shall be installed along the outside edge of the spineflower preserve and buffer areas, although specific areas adequately protected by steep terrain (1.5:1 or steeper) and/or dense vegetation may not require fencing but will require signage. Outdoor all-weather signs (12 by 16 inches) shall be posted on spineflower preserve access gates and adjacent to road crossings as well as along spineflower preserve fencing at 800-foot intervals.

In order to mitigate impacts from use of the proposed road, the EIS/EIR identifies BIO-79, which requires monitoring of the Potrero Canyon San Emigdio blue butterfly colony for five years after the completion of Potrero Canyon Road to evaluate whether operation of the road may be contributing to a population decline. Should it be determined that a population decline is occurring, a habitat creation plan shall be prepared that details the location and methods for habitat creation, success criteria, and measures to stabilize San Emigdio blue butterfly populations should habitat creation not succeed.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to San Emigdio blue butterfly under Alternative 2 will not be less than significant. Other potentially feasible mitigation measures might include minimizing impacts to the colony in Potrero Canyon, by implementation of Alternatives 3 through 7. Implementation of Alternative 2 creates significant unavoidable impacts, absent further mitigation.

After mitigation, short-term and long-term secondary impacts to San Emigdio blue butterfly would be adverse but not significant for Alternatives 3, 4, 5, 6, and 7.

COASTAL WESTERN WHIPTAIL (CALIFORNIA SPECIAL ANIMAL)

Life History

A moderate amount of information is known about the full species western whiptail (*Aspidoscelis tigris*), while less information is available about the subspecies coastal western whiptail (*A. t. stejnegeri*).[1] Therefore, much of the following discussion is based on the life history of the western whiptail, with expected similarities occurring in behaviors and habitat associations with the coastal western whiptail subspecies. The coastal western whiptail is found in coastal southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges; north into Ventura County; and south into Baja California, Mexico (Lowe *et al.* 1970; Stebbins 2003). The full species western whiptail ranges from north-central Oregon and southern Idaho; south through California and Nevada to Baja California, Mexico; and east into Utah and Arizona. The western whiptail is found at elevations from below sea level to around 2,130 meters (7,000 feet) AMSL (Stebbins 2003). In California the western whiptail is considered to be widely distributed but uncommon, except in desert regions where it is abundant in suitable habitat (Zeiner *et al.* 1988).

The western whiptail is found in a variety of habitats, primarily in areas where plants are sparse and where there are open areas for running. According to Stebbins (2003), the species ranges from deserts to montane pine forests where it prefers warmer and drier areas. The species is also found in woodland and streamside growth, and avoids dense grassland and thick shrub growth. The species is commonly found on the eastern and western slopes of the San Gabriel Mountains in all habitats except yellow pine forest (Schoenherr 1976). Schoenherr (1976) also indicates that the western whiptail probably occurs in oak woodlands.

The western whiptail is a diurnal, actively foraging lizard (Anderson 1993). Its prey include termites; scorpions; solfugids; cockroaches; antlion larvae; and various insect eggs, larvae, and pupae (Anderson 1993). Its daily activity period involves nearly continuous movement associated with foraging, with activity peaks in the morning and afternoon. Seasonal activity appears to vary with location. Pequegnat (1951), for example, observed that the most active periods for the western whiptail in the Santa Ana Mountains in Orange County occurred during early and late summer, and they were seldom detected during late June, July, and early August. Schoenherr (1976) observed that western whiptails in the San Gabriel Mountains first emerged during April and May, increased their activity until June, remained abundant and active all summer, and then reduced activity in September, with activity ceasing altogether in October.

[1] The full species *Aspidoscelis tigris* was formerly *Cnemidophorus tigris*, and the subspecies *A.t. stejnegeri* was formerly *C.t. multiscutatus*. The scientific name change is based on Reeder *et al.* (2002) and was subsequently adopted by CDFG for the Special Animals List (CDFG 2008C). Pre-2002 studies of the western whiptail used the old genus name *Cnemidophorus.*

In temperate zone populations, the reproductive season generally begins in May, but it occurs earlier in desert regions (Anderson and Karazov 1988). Western whiptails lay their eggs in the soil or underground (NatureServe 2007). Mean clutch size of the western whiptail varies from 2.1 to 4.0 (Garland 1993). Female body size is the major factor determining clutch and egg size. The length of the reproductive season appears to influence clutch frequency and is likely influenced by rainfall, temperature, reproductive resources, microenvironmental conditions for egg development, and adequate resources for hatchlings. Western whiptails may have two or three clutches per season in the southern part of their range (NatureServe 2007). Western whiptails probably are sexually mature at the end of their first year in the southern part of their range and in 20 to 23 months in the northern part of their range (NatureServe 2007).

Anderson (1993) reported home ranges in California of 2.5 acres (1.0 hectare) for males and 0.8 acre (0.3 hectare) for females. Individual home ranges overlap but are not defended (NatureServe 2007). There is no information available regarding dispersal, but the relatively large observed homes range for the species in California suggest that the western whiptail probably is mobile and capable of dispersing fairly long distances. However, it should be assumed that unsuitable habitat and physical barriers, such as wide roads, are limitations to dispersal.

Although the coastal western whiptail is still common and widespread within it range, habitat fragmentation and isolation of populations resulting from urban development constitute a long-term threat to this species because, like other small reptiles, the coastal western whiptail probably has limited ability to move through unsuitable habitat and across physical obstacles such as wide roads. Other potential threats related to urban development include an increase in the abundance of diurnal urban-related predators such as pet, stray, and feral cats and dogs (the whiptail's almost constant surface activity makes them highly detectable and particularly vulnerable to predators), habitat degradation (*e.g.*, trampling of vegetation and introduction of exotic species), increased roadkill, off-road vehicles, cattle grazing, and frequent fires that may cause long-term habitat transitions from shrublands (scrubs and chaparrals) to annual grassland (although fires that help maintain open areas probably are beneficial to this species).

Survey Results

Coastal western whiptails were observed in the High Country SMA (Dudek and Associates 2006B) and off site in Castaic Mesa (Compliance Biology 2006) during general wildlife surveys and habitat evaluations. Coastal western whiptails were not observed in the Specific Plan area during surveys for reptiles using pitfall traps conducted in 2004 and 2006 (Impact Sciences 2006A).

While coastal western whiptails were not trapped or otherwise observed during the pitfall trap surveys, the subspecies was identified as having potential to occur in the Project area (Impact Sciences 2006A). Because of observations in the High Country SMA and nearby locations

(Compliance Biology 2006; Dudek and Associates 2006B), the presence of suitable habitat, observance that the Project area is within the range of the subspecies as described by Stebbins (2003), and the fact that the entire Project area was not surveyed by Impact Sciences (2006A) at a level of detail necessary to determine presence or absence of a particular reptile species, the coastal western whiptail is assumed to be present in the Project area. Coastal western whiptails are assumed to be present in the following plant communities in the Project area: alluvial scrub, arrow weed scrub, big sagebrush scrub, coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, big sagebrush–California buckwheat, California walnut woodland, coast live oak woodland, Mexican elderberry, *Eriodictyon* scrub, mixed oak woodland and forest, purple needlegrass, river wash, valley oak woodland, and valley oak/grass. A total of 10,734 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 140 acres of suitable habitat would be permanently lost through implementation of the RMDP, representing 1.3% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats). A total of 61 acres would be temporarily impacted. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in a small loss of potential habitat for the coastal western whiptail, although this impact has not been quantified.

Although the coastal western whiptail is still a wide-ranging species, it has suffered habitat loss and fragmentation throughout much of its range. Therefore, the loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on coastal western whiptail (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,144 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 29.3% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats).

Although the coastal western whiptail is still a wide-ranging species, a relatively large amount and percentage of on-site habitat for the coastal western whiptail would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of coastal western whiptail on site by eliminating it from 29.3% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,283 acres (30.6%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the coastal western whiptail on site, thus substantially reducing its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Coastal western whiptails are mobile over short distances. However, those large-scale construction and/or grading activities associated with the RMDP causing permanent and temporary impacts likely would result in injury or mortality of individuals as a result of direct contact with or crushing by construction equipment used for vegetation clearing and grading. In addition, hibernating individuals could be injured or killed during construction and/or grading activities conducted during colder months by entombment or direct contact with grading equipment. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in impacts to coastal western whiptail individuals if fence construction occurred during colder months when whiptails are hibernating. Coastal western whiptail probably is capable of escaping potential impacts from fence construction when it is active on the ground surface in the warmer months because ground disturbances would be much more localized.

Because of the loss and fragmentation of habitat throughout much of this species' range, impacts to coastal western whiptails that would occur as a result of construction and/or grading activities would have a substantial adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial mortality of coastal western whiptails during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on coastal western whiptail on site by eliminating it from 29.3% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect coastal western whiptails in areas adjacent to construction zones. These impacts include construction-related dust, which could affect its prey; the inadvertent disturbance of habitat and loss of individual lizards in areas outside of the development footprint; and other disruptions associated with increased human activity. Although construction activities associated with RMDP facilities would be short term, would be phased over time, and would affect a relatively small proportion of potential habitat in the Project area, because of the general loss and fragmentation of habitat throughout its range, the construction activities would have a substantial adverse effect on the coastal western whiptail (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas could also include habitat fragmentation and isolation of some local populations of coastal western whiptail, making the species more vulnerable to extirpation. In addition, over the long term, the close proximity of urban development to suitable coastal western whiptail habitat could result in disruption of essential behavioral activities (*e.g.*, foraging, reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation, introduction of invasive species, such as Argentine ants and off-road vehicles); harassment and collection; predation by pet, stray, and feral cats and dogs; increased incidence of roadkill; and use of pesticides, which may reduce its prey or cause secondary poisoning. These secondary impacts would permanently reduce coastal western whiptail populations along the urban–open space edge and would contribute to the reduction of

the range and distribution of the coastal western whiptail in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the coastal western whiptail (**Figures 4.5-73** through **4.5-77,** Impacts to General Wildlife Habitats):

- Alternative 3 – 138 acres (1.3%) of permanent loss and 74 acres of temporary loss;
- Alternative 4 – 133 acres (1.2%) of permanent loss and 61 acres of temporary loss;
- Alternative 5 – 157 acres (1.5%) of permanent loss and 79 acres of temporary loss;
- Alternative 6 – 169 acres (1.6%) of permanent loss and 79 acres of temporary loss; and
- Alternative 7 – 73 acres (0.7%) of permanent loss and 151 acres of temporary loss.

Compared to Alternative 2, which would result in 140 acres (1.3%) of permanent loss and 61 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternative 3 would not be substantially different; under Alternatives 5, 6, and 7 it would be marginally to somewhat greater, and the combined direct permanent and temporary loss of habitat would be marginally less under Alternative 4. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2 (ranging from 1.2% for Alternative 4 to 1.6% for Alternative 6, compared to 1.3% for Alternative 2), and somewhat less under Alternative 7. Because of habitat loss and fragmentation throughout this species' range, these impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the coastal western whiptail (**Figures 4.5-73** through **4.5-77,** Impacts to General Wildlife Habitats):

- Alternative 3 – 2,937 acres (27.4%) of permanent loss;
- Alternative 4 – 2,815 acres (26.2%) of permanent loss;
- Alternative 5 – 2,736 acres (25.5%) of permanent loss;
- Alternative 6 – 2,420 acres (22.5%) of permanent loss; and
- Alternative 7 – 2,127 acres (19.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,144 acres (29.3%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to coastal western whiptail suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the coastal western whiptail occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the coastal western whiptail:

- Alternative 3 – 3,075 acres (28.6%) of permanent loss;
- Alternative 4 – 2,948 acres (27.5%) of permanent loss;
- Alternative 5 – 2,893 acres (27.0%) of permanent loss;

- Alternative 6 – 2,589 acres (24.1%) of permanent loss; and
- Alternative 7 – 2,199 acres (20.5%) of permanent loss.

Compared to Alternative 2, which would result in 3,283 acres (30.6%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the coastal western whiptail occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential impacts to individual coastal western whiptails to occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual coastal western whiptails occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as construction-related dust; human-caused habitat degradation; invasive species such as Argentine ants; harassment and collection; predation by pet, stray, and feral cats and dogs; increased incidence of roadkill; and use of pesticides. Short-term and long-term secondary impacts to coastal western whiptail resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to coastal western whiptail: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of hibernating individuals, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a scientific collecting permit to capture and relocate coastal western whiptails. General procedures to avoid and minimize impacts to coastal western whiptails during construction will be implemented and a qualified biologist would be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the coastal western whiptail resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,199 acres (20.5%) under Alternative 7 to 3,283 acres (30.6%) under Alternative 2. This would be substantial loss of suitable habitat and will reduce the size and distribution of the coastal western whiptail population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the coastal western whiptail in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 5,687 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the coastal western whiptail in these areas will improve habitat quality for the species and reduce impacts cause by the Project..

With respect to secondary effects, coastal western whiptails occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and dust. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation; invasive species such as Argentine ant; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The large open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation and vehicle collisions. Several specific mitigation measures will also be

implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to the extent feasible. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for coastal western whiptail are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-111 IMPACTS TO INDIVIDUALS – COASTAL WESTERN WHIPTAIL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate the loss of coastal western whiptail individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce impacts to coastal western whiptail individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to coastal western whiptail individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-112 LOSS OF HABITAT – COASTAL WESTERN WHIPTAIL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the coastal western whiptail through protection, restoration and enhancement, and management of habitat. Although this species primarily uses scrub and chaparral habitats, protection, restoration and enhancement, and management of habitat in the River Corridor SMA will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that are used by coastal western whiptail, and these areas would benefit from restoration activities. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the coastal western whiptail through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will conserve habitat for the coastal western whiptail in the Project vicinity. A total of 5,687 acres of potential habitat will be protected and managed, in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Therefore, after mitigation, the loss of habitat for the coastal western whiptail would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-113 SECONDARY IMPACTS – COASTAL WESTERN WHIPTAIL

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the coastal western whiptail, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation**,** harassment and collection, and increased incidence of roadkill.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to habitat and/or coastal western whiptail individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian

and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address secondary effects such as construction-related dust; increased human activity; invasive species such as Argentine ant; predation by pet, stray, and feral cats and dogs; and pesticides, which may reduce prey or cause secondary poisoning.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 also will be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-64 requires preparation of an IPM plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to coastal western whiptail and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

ROSY BOA (CALIFORNIA SPECIAL ANIMAL)

Life History

The rosy boa (*Charina trivirgata*) occurs from southern California and southwestern Arizona; south throughout Baja California, Mexico and northwestern mainland Mexico; avoiding the lowest deserts, which are mainly in agricultural production, or open dunes (Stebbins 2003; Yingling 1982; Zeiner *et al.* 1988). The rosy boa in California ranges from Los Angeles, eastern Kern, and southern Inyo counties, and south through San Bernardino, Riverside, Orange, and Diego counties (Spiteri 1988; Stebbins 2003; Zeiner *et al.* 1988). The species occurs at elevations from sea level to 1,370 meters (5,000 feet) AMSL in the Peninsular and Transverse mountain ranges. Within its range in southern California, the rosy boa is absent only from the southeastern corner of California around the Salton Sea and the western and southern portions of Imperial County (Zeiner *et al.* 1988).

The rosy boa inhabits rocky shrubland and desert habitats, and is attracted to oases and streams, but does not require permanent water (Stebbins 2003). In coastal areas, the rosy boa occurs in rocky chaparral-covered hillsides and canyons, while in the desert it occurs on scrub flats with good cover (Zeiner *et al.* 1988). Holland and Goodman (1998) add that the species is known in a variety of desert and semi-desert habitats, and that it may occur in oak woodlands intergrading with scrub or chaparral habitats but is absent from grasslands. A majority of the specimens found on the Marine Corps Base, Camp Pendleton (San Diego County, California) were in coastal sage scrub, chaparral, or mixed habitats, but the species was also found in riparian areas (Holland and Goodman 1998). Yingling (1982) observed that the rosy boa occurs in chaparral and desert-edge foothills and, within these habitats, it appears to prefer moderate to dense vegetative cover with rocks. Holland and Goodman (1998) state that rock outcrops are commonly found in habitats used by the rosy boa and, according to Zeiner *et al.* (1988), the species has been found under rocks, in boulder piles, and along rock outcrops and vertical canyon walls. Additionally, woodrat (*Neotoma* sp.) nests are often used as refugia (Holland and Goodman 1998). The species is known to be a good climber (Stebbins 2003).

Rosy boas are primarily nocturnal but may be active at dusk and rarely in the daytime (Stebbins 2003). However, Holland and Goodman (1998) maintain that the species can be diurnally or nocturnally active, though diurnal excursions are often conducted during overcast days. Rosy boas are active between April and September (Holland and Goodman 1998). The rosy boa may aestivate in the hottest months and hibernate in the coolest months of the year, remaining inactive in burrows or under surface debris (NatureServe 2007).

There is little information on the foraging habits or prey species for the rosy boa. Holland and Goodman (1998) and Stebbins (2003) indicate that this species preys upon small mammals (including pocket mice (*Chaetodipus* and *Perognathus* spp.) and young woodrats), reptiles,

amphibians, and birds. Zeiner *et al.* (1988) notes that the species is known to eat lizards in captivity and may do so in the wild.

Little is known regarding rosy boa reproduction. Female rosy boas generally give birth to three to 14 young from October through November, and the young are live-born (Stebbins 2003). Available information regarding dispersal by the species is also limited. The only information available in the literature is a statement by Zeiner *et al.* (1988) that the rosy boa probably does not migrate.

The spatial behavior and movement ecology of the coastal rosy boa (*C. t. roseofusca*), which is the same subspecies that occurs in the Project vicinity, was studied using radiotelemetry by Diffendorfer *et al.* (2005) at four sites in San Diego and Riverside counties for up to four years. Movement (measured as estimated distance moved per day) was characterized by frequent short-distance movements and rare long-distance movement events that primarily occurred in the spring. Short-distance movements per day were predominantly less than 10 meters (33 feet) per day. Home ranges were relatively small, with a largest recorded home range of 1.5 hectares (3.7 acres) after four years of cumulative data. Home ranges expanded during the warmer months and were stable or smaller during the colder months. Males and females exhibited similar movement patterns, and there was a high level of spatial overlap among individuals and lack of territoriality (*i.e.*, defended home ranges).

Although the rosy boa is not considered to be very threatened on a rangewide basis due to large amounts of relatively inaccessible habitat (NatureServe 2007), it may be threatened with local extirpation in coastal regions of southern California resulting from development-related habitat fragmentation and isolation of populations. The extent of this potential threat is unknown as little information is available on dispersal by the species, although, as noted above, adults do not move very far (Diffendorfer *et al.* 2005). The species is noted to search black top roads for prey (Stebbins 2003), making it vulnerable to road mortality. As a primarily nocturnal species, increased lighting would make the species more vulnerable to predation from nocturnal predators such as raccoon, skunk, opossum, fox, coyotes, and owls. An increase in the abundance of pet, stray, and feral cats and dogs would also make the species more vulnerable to predation. Other potential threats related to urban development include the use of rodenticides near open space, which could result in fewer mammal burrows that provide refugia and a reduced prey base, collecting of snakes (the rosy boa is popular in the pet trade (NatureServe 2007)), and habitat degradation (*e.g.*, trampling of vegetation and introduction of exotic species).

Survey Results

A habitat assessment and surveys for reptiles were conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences 2006A). Rosy boas were not trapped or otherwise observed during the surveys. However, based on the presence of suitable habitat and microhabitat resources in the Project area, that the Project area is within the range of the species,

and that the Project area has not been surveyed in its entirety or at a level of detail necessary to determine presence or absence of a particular reptile species, rosy boa has been identified as having high potential to occur in the Project area (Dudek and Associates 2006B). Therefore, the rosy boa is considered potentially present within the following on-site plant communities: alluvial scrub, big sagebrush scrub, coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, big sagebrush–California buckwheat, *Eriodictyon* scrub, and river wash. A total of 6,908 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 102 acres of suitable habitat would be permanently lost through implementation of the RMDP, representing 1.5% of suitable habitat on site (**Figure 4.5-102,** Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 47 acres would be temporarily impacted. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in a small loss of potential habitat for the species, although this impact has not been quantified.

Although the rosy boa is still a wide-ranging species, it is becoming increasingly uncommon as result of habitat loss and fragmentation throughout its range, and also likely because of collecting. The loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 2,006 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 29.0% of suitable

habitat on site (**Figure 4.5-102,** Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

Although the rosy boa is still a wide-ranging species, a relatively large amount and percentage of on-site habitat for the rosy boa would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 29.0% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,107 acres (30.5%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the rosy boa on site, thus substantially reducing its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Rosy boas are not very mobile, and those large-scale construction and/or grading activities associated with the RMDP causing permanent and temporary impacts likely would result in injury or mortality of individuals as a result of direct contact with or crushing by construction equipment used for vegetation clearing and grading. In addition, hibernating individuals could be injured or killed during construction and/or grading activities conducted during colder months. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in injury or mortality of rosy boa individuals if fence construction occurred during colder months when individuals are hibernating. This species probably is capable of escaping impacts from fence construction when it is active on the ground surface in the warmer months because ground disturbances would be much more localized.

Because this species is becoming increasingly uncommon in its range, impacts that would occur as a result of construction and/or grading activities would have a substantial adverse effect on this species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial mortality of rosy boas during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on this species on site by eliminating it from 29.0% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could include disruptions associated with increased human activity, noise, and nighttime illumination; the latter of which may disrupt the natural activity cycle of this diurnal species, making it more vulnerable to predation by nocturnal predators such as owls and coyotes. Although potential secondary impacts of the construction activities would be short-term and would be phased over time, this species is becoming increasingly uncommon throughout its range. Therefore, construction activities would have a substantial adverse effect on this species (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in habitat fragmentation and isolation of some local populations of the rosy boa, making the species more vulnerable to extirpation. In addition, over the long term, the close proximity of urban development to suitable rosy boa habitat could result in disruption of essential behavioral activities (*e.g.*, foraging and reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation and introduction of invasive species, such as Argentine ant) and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used for refuge and a reduction in the prey base. These secondary impacts would permanently reduce rosy boa populations along the urban–open space edge and would contribute to the reduction of the range and distribution of the rosy boa in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the rosy boa (**Figures 4.5-103** through **4.5-107,** Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 95 acres (1.4%) of permanent loss and 54 acres of temporary loss;
- Alternative 4 – 97 acres (1.4%) of permanent loss and 45 acres of temporary loss;
- Alternative 5 – 100 acres (1.4%) of permanent loss and 59 acres of temporary loss;
- Alternative 6 – 84 acres (1.2%) of permanent loss and 56 acres of temporary loss; and
- Alternative 7 – 47 acres (0.7%) of permanent loss and 76 acres of temporary loss.

Compared to Alternative 2, which would result in 102 acres (1.5%) of permanent loss and 47 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternatives 3, 4, and 5 would not be substantially different; the combined direct permanent and temporary loss of habitat would be marginally lower under Alternative 6 and somewhat lower under Alternative 7. The larger difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2, and would be substantially less under Alternative 7. Because the rosy boa is becoming increasingly uncommon, direct impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the rosy boa (**Figures 4.5-103** through **4.5-107,** Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 1,895 acres (27.4%) of permanent loss;
- Alternative 4 – 1,830 acres (26.5%) of permanent loss;
- Alternative 5 – 1,780 acres (25.8%) of permanent loss;
- Alternative 6 – 1,525 acres (22.1%) of permanent loss; and
- Alternative 7 – 1,355 acres (19.6%) of permanent loss.

Compared to Alternative 2, which would result in 2,006 acres (29.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to rosy boa suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the rosy boa occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the rosy boa:

- Alternative 3 – 1,989 acres (28.8%) of permanent loss;
- Alternative 4 – 1,927 acres (27.9%) of permanent loss;
- Alternative 5 – 1,879 acres (27.2%) of permanent loss;
- Alternative 6 – 1,609 acres (23.3%) of permanent loss; and
- Alternative 7 – 1,402 acres (20.3%) of permanent loss.

Compared to Alternative 2, which would result in 2,107 acres (30.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect

impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the rosy boa occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual rosy boas as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to rosy boas occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as human-caused habitat degradation and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; invasive species such as Argentine ant; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in a reduction in the prey base for the species. Short-term and long-term secondary impacts to rosy boa resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to rosy boa: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of individuals in burrows, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a Scientific Collecting Permit to capture and relocate rosy boas. General procedures to avoid and minimize impacts to rosy boas during construction will be implemented, and a qualified biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the rosy boa resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,402 acres (20.3%) under Alternative 7 to 2,107 acres (30.5%) under Alternative 2. This would be a substantial loss of suitable habitat and would reduce the size and distribution of the rosy boa population, if present, in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the rosy boa in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 3,724 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the rosy boa in these areas will improve habitat quality for the species by providing additional cover and habitat for prey species and will reduce impacts caused by the Project.

With respect to secondary effects, rosy boas occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and lighting. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation and collection; invasive species, such as Argentine ant; pet, stray, and cats and feral dogs; vehicle collisions; and use of rodenticides. The large open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation and vehicle collisions. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. Rodenticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to the extent feasible.

Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for rosy boa are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-114 IMPACTS TO INDIVIDUALS – ROSY BOA

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate the impacts to rosy boa individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce impacts to rosy boa individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to rosy boa individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-115 LOSS OF HABITAT – ROSY BOA

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the rosy boa through protection, restoration and enhancement, and management of habitat. Although this species primarily uses scrub and chaparral habitats, protection, restoration and enhancement, and management of habitat in the River Corridor SMA will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. The River Corridor SMA includes terrestrial habitats that may used by rosy boa, and these areas would benefit from restoration activities. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities

for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the rosy boa through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

The mitigation required by the Newhall Ranch Specific Plan Program EIR and the mitigation measures recommended by this EIS/EIR will result in a large, managed open space system that will conserve habitat for the rosy boa in the Project vicinity. A total of 3,724 acres of potential habitat for the rosy boa will be protected and managed, in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Therefore, after mitigation, the loss of habitat for the rosy boa would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-116 SECONDARY IMPACTS – ROSY BOA

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the rosy boa, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation**;** habitat fragmentation; lighting; and harassment and collection.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to habitat and/or rosy boa individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 will be implemented to mitigate for potential lighting impacts by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address specific potential edge effects, including harassment by humans; predation by pet, stray, and feral cats and dogs; invasion by Argentine ants; and use of rodenticides.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection and restoration and enhancement.

In addition, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 requires preparation of an integrated pest management (IPM) plan that addresses the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space–urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the rosy boa and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SAN BERNARDINO RINGNECK SNAKE (CALIFORNIA SPECIAL ANIMAL)

Life History

A fair amount of information is available for the full species ringneck snake (*Diadophis punctatus*), while less information is available for the subspecies San Bernardino ringneck snake (*D. p. modestus*). Therefore, much of the following discussion is based on the life history of the full species ringneck snake, with expected similarities occurring in behaviors and habitat associations with the San Bernardino ringneck snake subspecies.

The ringneck snake is widely distributed in North America, with 13 currently recognized subspecies occurring from southern Washington and Idaho to northern Baja California, Mexico and from the Atlantic Coast to the Pacific Coast (Hinojosa 1996; Pinou *et al.* 1995; Stebbins 2003; Stoltz 1993). The ringneck snake is widespread in California and is absent only from large portions of the Central Valley, high mountains, desert, and areas east of the Sierra–Cascade crest (Zeiner *et al.* 1988). Currently there are six recognized subspecies in California occurring at elevations ranging from sea level to 2,150 meters (7,050 feet) AMSL (Zeiner *et al.* 1988). The San Bernardino ringneck snake subspecies is found along the southern California coast from the Santa Barbara area south to northern San Diego County, and inland into the San Bernardino Mountains. It should be noted, however, that the genus *Diadophis* is in need of taxonomic study, and that the six recognized subspecies in California are nearly genetically indistinguishable (NatureServe 2007).

The ringneck snake is found in moist habitats, including woodlands, hardwood and conifer forest, grassland, sage scrub, chaparral, croplands/hedgerows, and gardens (NatureServe 2007; Stebbins 2003). In arid regions, the ringneck snake occurs in forests, woodlands, sage scrub, chaparral, and riparian corridors (Stebbins 2003). At the Marine Corps Base, Camp Pendleton, in San Diego County, California, the species is found in most habitats, including coastal sage scrub, chaparral, oak woodland, riparian areas, and grassland (Holland and Goodman 1998). During a 26-year-long study in Kansas, Fitch (1975) found that; while ringneck snakes used a wide variety of habitats, terrain, and vegetation; their primary habitat requirements included soil that is slightly damp but not wet or soggy; abundant shelter in the form of a surface mat of dead vegetation and/or loose objects such as flat rocks, boards, or trash; and screening shrubs or trees with open canopies sparse enough to permit abundant sunshine to reach the ground. Zeiner *et al.* (1988) state that ringneck snakes are most common in open, relatively rocky areas within valley–foothill, mixed chaparral, and annual grassland habitats. Holland and Goodman (1998) observed the species to be more common in grasslands and more scarce in riparian areas where sandy soils are extensive or not bordered by areas with heavier soils. While ringneck snakes utilize a wide variety of habitats, they are usually found on the ground under bark, beneath and inside rotting logs, and under stones and boards (Stebbins 2003).

The ringneck snake appears to have geographic variation in its preferred prey species. In some regions, earthworms appear to be the primary food source (Myers 1965; Fitch 1975), and in other regions salamanders (Barbour 1950; Stebbins 1954; Basey 1976; Zeiner *et al.* 1988) or lizards (Gehlbach 1974) are the primary food source. Other known prey items include insects (Holland and Goodman 1998) and other arthropods (Tennant 1984); treefrogs; skinks; legless lizards (Stebbins 1954); and small snakes such as the two-striped garter snake (Gehlbach 1974; Zeiner *et al.* 1988; Goodman and Tate 1998). Zeiner *et al.* (1988) state that the range of the ringneck snake in California overlaps with that of various species of slender salamander, suggesting that the ringneck snake's distribution may be limited by this food source.

During the day in the spring and summer, ringneck snakes are typically found under surface objects (Holland and Goodman 1998; Zeiner *et al.* 1988), with crepuscular (dawn and dusk) and some nocturnal activity observed during the summer (Holland and Goodman 1998; Zeiner *et al.* 1988). Ringneck snakes may aestivate during the heat of summer and are generally inactive and hibernate during the winter (NatureServe 2007).

Ringneck snakes are sexually mature in two to three years (NatureServe 2007). Females typically become sexually active after their third hibernation season and males become sexually active after their second hibernation season (Fitch 1975). Sexes are often found together at suitable shelter areas (Fitch 1975), and it is thought that ringneck snakes use olfactory cues to follow other individuals to these shelter areas (Dundee and Miller 1968). Mating presumably occurs in March and April, with egg-laying generally occurring in June and July (Perkins 1938; Fitch 1975; Stebbins 2003; Holland and Goodman 1998). Fitch (1975) found that ringneck snakes in Kansas ovulate in the latter half of May, with the eggs laid in late June or early July. Some egg laying, however, may occur as early as April (Nussbaum *et al.* 1983). Nussbaum *et al.* (1983) found that eggs are laid from April to July depending on local conditions. Eggs are laid from late May through August in Florida, and double clutches may be laid in the south (NatureServe 2007). Eggs are generally deposited in loose aerated soil, in stabilized talus, or in rotting logs (Nussbaum *et al.* 1983), with communal nesting common (Holland and Goodman 1998; NatureServe 2007). Clutch sizes range from one to 18 eggs. Incubation of eggs may take between 42 to 56 days (Clark *et al.* 1997; NatureServe 2007; Perkins 1938). Hatching has been reported from August to October (Nussbaum *et al.* 1983), but Fitch (1975) reports that most hatching occurs in August.

Ringneck snakes may exhibit site tenacity, establishing a long-term home range, but there is no evidence of territorial defense (Zeiner *et al.* 1988). Fitch (1975) found that after a number of years, ringneck snakes could still be located within 10 meters (33 feet) of their initial capture point, indicating strong site tenacity. Some ranges for ringneck snakes in Kansas tended to be elongate, with maximum axes of 140 meters (460 feet) (Fitch 1975). The distance between recaptures in this study averaged 80 meters (262 feet), with a range of 0 to 1,700 meters (0 to 5,577 feet). In areas with large seasonal temperature fluctuations, there appears to be some

seasonal movement between habitats, with average movements between summer habitats and hibernacula of about 120 meters (394 feet) (Fitch 1975; Parker and Brown 1974). In montane locations in California, it is possible that this shift also occurs (Zeiner *et al.* 1988), but in areas where the temperature shift is not great, the species likely does not shift between habitats.

Ringneck snakes appear to be clumped in distribution, often occurring together in suitable cover (Hammerson 1982; Blanchard 1942). Population density in Kansas was estimated at 1,266 individuals per hectare (range of 719 to 1,849 per hectare) (Fitch 1975), but densities are expected to vary considerably depending on local habitat conditions, available resources, and other factors.

Survey Results

A habitat assessment and surveys for reptiles were conducted on portions of the Specific Plan area in 2004 and 2006 (Impact Sciences 2006A). San Bernardino ringneck snakes were not trapped or otherwise observed during the surveys. However, based on the presence of abundant suitable habitat and microhabitat resources in the Project area, the fact that the Project area is within the range of the subspecies, and the fact that the Project area has not been surveyed in its entirety or at a level of detail necessary to determine presence or absence of a particular reptile species, San Bernardino ringneck snake has been identified as having high potential to occur in the Project area (Dudek and Associates 2006B). Therefore, the San Bernardino ringneck snake is considered potentially present within the following on-site plant communities: alluvial scrub, big sagebrush scrub, coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, big sagebrush–California buckwheat, California walnut woodland, coast live oak woodland, Mexican elderberry, mulefat scrub, southern willow scrub, southern cottonwood–willow riparian, *Eriodictyon* scrub, mixed oak woodland, purple needlegrass, river wash, southern coast live oak riparian forest, shrub tamarisk, valley oak woodland, and valley oak/grass. A total of 11,236 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 191 acres of suitable habitat would be permanently lost through implementation of the RMDP, representing 1.7% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats). A total of 111 acres would be temporarily impacted. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in a small loss of potential habitat for San Bernardino ringneck snake, although this impact has not been quantified.

Although the San Bernardino ringneck snake is still a wide-ranging species, loss and fragmentation of habitat due to urban development likely has reduced populations of this species. The loss of habitat that would occur as a result of construction and/or grading activities would have a substantial adverse effect on San Bernardino ringneck snake (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 3,154 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 28.1% of suitable habitat on site (**Figure 4.5-72,** Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site habitat for the San Bernardino ringneck snake would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of San Bernardino ringneck snake on site by eliminating it from 28.1% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,345 acres (29.8%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the San Bernardino ringneck snake on site, thus substantially reducing its range on site (significance criteria 1

and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

San Bernardino ringneck snakes are relatively mobile over short distances. However, large-scale construction and/or grading activities associated with the RMDP causing permanent and temporary impacts likely would result in injury or mortality of individuals. In addition, hibernating individuals could be injured or killed during construction and/or grading activities conducted during colder months. Activities associated with implementation of the SCP (*e.g.*, fence construction) could also result in impacts to San Bernardino ringneck snake individuals if fence construction occurred during colder months when individuals are hibernating. San Bernardino ringneck snake probably is capable of escaping potential impacts from fence construction when it is active on the ground surface in the warmer months.

Because this species has suffered loss and fragmentation of habitat throughout its range, impacts to San Bernardino ringneck snakes that would occur as a result of construction and/or grading activities would have a substantial adverse effect (Impacts to Individuals) and would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals, but over a much larger area. There is a potential for substantial mortality of San Bernardino ringneck snakes during vegetation clearing, grading, and other construction-related activities. This potential loss of individuals would have a substantial adverse effect on San Bernardino ringneck snake on site by eliminating it from 28.1% of potentially occupied habitat, thus substantially reducing its number and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could include disruptions associated with construction-related dust (which may affect its prey), increased human activity, noise, and nighttime illumination; the latter of which may disrupt the natural activity cycle of this diurnal subspecies, making it more vulnerable to predation by nocturnal predators, such as owls and

coyotes. Although construction activities will be short term and phased over time, because of the loss and fragmentation of habitat for this species throughout its range, construction activities would have a substantial adverse effect on San Bernardino ringneck snake (significance criterion 1). Short-term secondary impacts would be significant, absent mitigation.

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in habitat fragmentation and isolation of some local populations of the San Bernardino ringneck snake, making the subspecies more vulnerable to extirpation. In addition, over the long term, the close proximity of urban development to suitable San Bernardino ringneck snake habitat could result in disruption of essential behavioral activities (*e.g.*, foraging and reproduction) and greater vulnerability to several potential secondary impacts, including human-caused habitat degradation (*e.g.*, trampling of vegetation and introduction of invasive species, such as Argentine ant) and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used for refuge and a reduction in the prey base. These secondary impacts would permanently reduce San Bernardino ringneck snake populations along the urban–open space edge and would contribute to the reduction of the range and distribution of the San Bernardino ringneck snake in the Project area (significance criteria 1 and 7). Long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the San Bernardino ringneck snake (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 176 acres (1.6%) of permanent loss and 123 acres of temporary loss;
- Alternative 4 – 172 acres (1.5%) of permanent loss and 107 acres of temporary loss;
- Alternative 5 – 202 acres (1.8%) of permanent loss and 133 acres of temporary loss;

- Alternative 6 – 202 acres (1.8%) of permanent loss and 127 acres of temporary loss; and
- Alternative 7 – 81 acres (0.7%) of permanent loss and 179 acres of temporary loss.

Compared to Alternative 2, which would result in 191 acres (1.7%) of permanent loss and 111 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternative 3 would not be substantially different, and the combined direct permanent and temporary loss of habitat would be marginally to somewhat lower under Alternatives 4 and 7 and marginally to somewhat higher under Alternatives 5 and 6. Alternative 7 would have the least amount of permanent impacts and greatest amount of temporary impacts, although the combined total impact would still be the lowest of all the alternatives. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2 (ranging from 1.5% for Alternative 4 to 1.8% for Alternatives 5 and 6, compared to 1.7% for Alternative 2); it would be substantially less under Alternative 7 (0.7%). Because the San Bernardino ringneck snake has suffered from loss and fragmentation of habitat, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the San Bernardino ringneck snake (**Figures 4.5-73** through **4.5-77,** Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,945 acres (26.2%) of permanent loss;
- Alternative 4 – 2,820 acres (25.1%) of permanent loss;
- Alternative 5 – 2,738 acres (24.4%) of permanent loss;
- Alternative 6 – 2,419 acres (21.5%) of permanent loss; and
- Alternative 7 – 2,126 acres (18.9%) of permanent loss.

Compared to Alternative 2, which would result in 3,154 acres (28.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be

constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to San Bernardino ringneck snake suitable habitat under Alternative 7 compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the San Bernardino ringneck snake occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the San Bernardino ringneck snake:

- Alternative 3 – 3,121 acres (27.8%) of permanent loss;
- Alternative 4 – 2,992 acres (26.6%) of permanent loss;
- Alternative 5 – 2,939 acres (26.2%) of permanent loss;
- Alternative 6 – 2,620 acres (23.3%) of permanent loss; and
- Alternative 7 – 2,207 acres (19.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,345 acres (29.8%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and/or Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the San Bernardino ringneck snake occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual San Bernardino ringneck snakes as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual San Bernardino ringneck snakes occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as construction-related dust; human-caused habitat degradation and harassment and collection; predation by pet, stray, and feral cats and dogs as well as other mesopredators; increased predation by nocturnal predators (such as owls and coyotes) as a result of nighttime lighting; increased incidence of roadkill; invasive species such as Argentine ant; and introduction of rodenticides that may be used to control prey species (*e.g.*, small rodents), resulting in both the loss of burrows used for refuge and a reduction in the prey base. Short-term and long-term secondary impacts to San Bernardino ringneck snake resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to San Bernardino ringneck snake: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment, entombment of aestivating or hibernating individuals, and increased exposure of individuals left without protective cover. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Pre-construction surveys within the proposed disturbance area will be conducted by a qualified biologist in possession of a scientific collecting permit to capture and relocate San Bernardino ringneck snakes. General procedures to avoid and minimize impacts to ringneck snakes during construction will be implemented, and a qualified

biologist will be present during construction in order to relocate any identified remaining individuals, further reducing impacts to the species.

The combined permanent loss of suitable habitat for the San Bernardino ringneck snake resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,207 acres (19.6%) under Alternative 7 to 3,154 acres (28.1%) under Alternative 2. This would be a substantial loss of suitable habitat and will reduce the size and distribution of the San Bernardino ringneck snake population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the San Bernardino ringneck snake in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 6,047 acres of suitable habitat for this species. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Restoration and enhancement of habitat used by the San Bernardino ringneck snake in these areas will improve habitat quality for the species.

With respect to secondary effects, San Bernardino ringneck snakes occupying habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and dust. Biological monitoring during vegetation clearing and grading, as well as dust suppression measures, will help reduce these construction-related impacts. Potential long-term effects of development include habitat fragmentation; increased human activity, including habitat degradation and collection; invasive species such as Argentine ant; pet, stray, and cats and feral dogs; vehicle collisions; and use of pesticides. The large open space system will provide adequate protected open space that will in part offset these impacts, especially habitat fragmentation and vehicle collisions. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in, or adjacent to, open space areas. Pesticides will be controlled through an integrated pest management (IPM) plan. Argentine ant invasions of upland habitats in the open space system will be monitored and controlled to extent feasible. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for San Bernardino ringneck snake are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-117 IMPACTS TO INDIVIDUALS – SAN BERNARDINO RINGNECK SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified two mitigation measures that will avoid, minimize, or mitigate impacts to San Bernardino ringneck snake individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce impacts to San Bernardino ringneck snake individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-54 requires surveys to capture and relocate coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, coast patch-nosed snake, and San Bernardino ringneck snake individuals 30 days prior to construction activities in suitable habitats.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to San Bernardino ringneck snake individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-118 LOSS OF HABITAT – SAN BERNARDINO RINGNECK SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the San Bernardino ringneck snake through protection, restoration and enhancement, and management of habitat. This subspecies primarily uses scrub and chaparral habitats but also uses riparian habitats. Therefore, protection, restoration and enhancement, and management of habitat in the River Corridor SMA will reduce impacts to this species.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the San Bernardino ringneck snake through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the San Bernardino ringneck snake would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-119 SECONDARY IMPACTS – SAN BERNARDINO RINGNECK SNAKE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the San Bernardino ringneck snake, including short-term construction activities and long-term effects due to factors such as human-caused habitat degradation**,** habitat fragmentation, lighting, and harassment and collection.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate impacts from increased long-term human activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17, SP-4.6-20, SP-4.6-27, SP-4.6-34, SP-4.6-35, and SP-4.6-39 will be implemented to protect against both potential short-term construction-related secondary impacts and long-term secondary impacts to habitat and/or San Bernardino ringneck snake individuals associated with increased human activity and grazing.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-27 and SP-4.6-39 require removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-1 through SP-4.6-16, SP-4.6-17, SP-4.6-18, SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, will be implemented to mitigate for impacts due to habitat fragmentation and potential isolation of populations.

In addition, SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails);

prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 will be implemented to mitigate for potential lighting impacts by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures that address secondary effects such as construction-related dust; harassment by humans; Argentine ants; predation by pet, stray, and feral cats and dogs; and use of pesticides.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will be implemented to mitigate for impacts from increased human activity through habitat protection, restoration and enhancement, and management.

In addition, BIO-63, BIO-64, BIO-69, and BIO-73 will be implemented to mitigate impacts related to increases in human activity:

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 requires preparation of an integrated pest management (IPM) plan that addresses the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits for the initial tract map.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-72, BIO-85, and BIO-87 will be implemented to reduce and control Argentine ants in open space areas.

BIO-72 specifies that container plants for use within 100 feet of the open space areas shall be inspected for pests, including Argentine ants. Plant palettes also will include non-invasive species that do not require high irrigation rates, which will help keep moisture levels low at the open space-urban interface. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the San Bernardino ringneck snake and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

COOPER'S HAWK (NESTING) (WL)

Life History

The Cooper's hawk (*Accipiter cooperii*) is a diurnally active species that breeds from British Columbia eastward to Nova Scotia and southward to northern Mexico and Florida. This species' winter range extends from British Columbia eastward to New England and southward primarily to Honduras (AOU 1998). In California, the Cooper's hawk is a breeding resident throughout most woodlands of the state and is present year round except for the Colorado River and desert areas where the species no longer breeds. The species also occurs in California as a spring and fall migrant and as a winter resident (Garrett and Dunn 1981). The Cooper's hawk ranges from sea level to above 2,700 meters (9,000 feet) AMSL (Zeiner *et al.* 1990A).

Cooper's hawk is found in areas with dense stands of live oak, riparian, or other forest habitats near water (Zeiner *et al.* 1990A). They frequent landscapes where wooded areas occur in patches and grooves and often use patchy woodlands and edges with snags for perching (Beebe 1974). The Cooper's hawk nests in extensive forests, woodlots, and occasionally in isolated trees in more open areas (Price 1941; Call 1978; Reynolds *et al.* 1982; Moore and Henny 1983; Wiggers and Kritz 1991; Stewart 1975; Asay 1987). Canopy cover is an important aspect for nesting because it provides greater protection from extreme weather and predation, whereas understory cover does not appear to be an important feature in nest selection (Bosakowski *et al.* 1992). During spring and fall, migrating individuals preferred deciduous forests rather than open or human-occupied areas (Goodrich 2005). Winter habitat use is similar to that of the breeding season (Millsap 1981).

During breeding and non-breeding season, the Cooper's hawk feeds predominantly on avian prey, sometimes taking mammals (Terres 1980). Mammals constitute a higher proportion of the hawk's diet in the western United States than elsewhere (Bosakowski *et al.* 1992). Other prey groups included in their diet are reptiles, amphibians, insects, and fish (Rosenfield 1988). The Cooper's hawk typically forages near open water or riparian vegetation and catches its prey in the air, on ground, and in vegetation. It is common for the hawk to fly with its prey to a nearby water source in order to drown it (Terres 1980).

The Cooper's hawk breeds from March through August, with peak breeding occurring May through July. The species breeds primarily in riparian areas and oak woodlands and is most common in montane canyons (Garrett and Dunn 1981; Hamilton and Willick 1996). Nests usually occur in second-growth conifer stands or in deciduous riparian areas, usually near streams or open water (Zeiner *et al.* 1990A). It is common in the western United States to find Cooper's hawk nests in stands of cottonwoods along stream courses, especially where the tree stands are fairly large (Call 1978). Nesting areas and breeding locations are typically reused over multiple years.

Clutch size consists of four to five eggs that have an incubation time of 35 to 36 days; during the incubation period, the male provides food to the female while the female tends to and defends the nest (Brown and Amadon 1968). The young birds usually depart the nest at 30 to 34 days but continue to be brought food for up to seven weeks after leaving the nest. The young may remain together near the nest for another five to six weeks (County of Riverside 2008).

Primary threats to Cooper's hawks include habitat destruction, primarily lowland riparian areas, and human disturbance at nest sites (Remsen 1978; Boal and Mannan 1998). Because of increased urbanization and development within preferred habitat of Cooper's hawk, there has been a decline in the population of this species in California (Remsen 1978). The most common nesting fatalities are due to predation by raccoons and ravens, both urban-adapted species, and great horned owls (Schriver 1969; Rosenfield 1988). Boal and Mannan (1998) found that 70% of adult Cooper's hawk deaths were a result of collisions with man-made objects in urban areas. Another documented threat to the species is the use of pesticides. DDT and other chlorinated hydrocarbon pesticides have been used worldwide to control crop pests and disease-carrying insects since the 1940s. Long-term DDT exposure and accumulation resulted in eggshell thinning and loss of young in many raptor species, resulting in serious declines in reproductive success (Terres 1980; Henny and Wight 1972). Pesticides may also affect prey abundance, including small mammals, amphibians, and reptiles, and may also cause secondary poisoning. Several other potential human- or development-related factors may affect Cooper's hawks. Construction-related impacts include dust, noise and ground vibration, increased human activity in close proximity to nesting and foraging areas, and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Long-term effects related to development include increased human activity, noise, and lighting.

Survey Results

Avian biological inventories have been conducted for multiple years along the Santa Clara River within suitable habitat for the Cooper's hawk. Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2008.

The Cooper's hawk has been regularly observed within riparian and oak woodland habitats over multiple years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River within the riparian scrub and woodland habitat (Guthrie 1988, 1989, 1990, 1991A, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2006A, 2006C; Bloom Biological 2007A, 2008; Dudek and Associates 2006B; Compliance Biology 2006D; Labinger *et al.* 1995, 1996, 1997B; Labinger and Greaves 1999A). This species is known to be a year-round resident within the Project area (Bloom Biological 2007A, 2008).

The Project area provides both foraging and nesting habitat for the species. California walnut woodland, coast live oak woodland, mixed oak woodland, southern coast live oak riparian forest, southern cottonwood–willow riparian, southern willow scrub, valley oak woodland, and valley oak/grass are suitable nesting and foraging habitats for the Cooper's hawk. There is a total of 1,940 acres of suitable nesting/foraging habitat within the Project area. Additional suitable foraging habitat in the Project area for the Cooper's hawk, necessary for the development of broods, includes big sagebrush scrub, coastal scrub alliances and associations, *Eriodictyon* scrub, and Mexican elderberry. There is a total of 4,441 acres of additional suitable foraging habitat within the Project area. The combined suitable nesting and foraging habitat in the Project area is 6,381 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 104 acres of suitable nesting and/or foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.6% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass and Walnut Woodland Wildlife Habitat). Of these impacts, 48 acres are nesting and foraging habitat (*i.e.*, habitat suitable for both nesting and foraging, including California walnut woodland, coast live oak woodland, mixed oak woodland, southern coast live oak riparian forest, southern cottonwood–willow riparian, southern willow scrub, valley oak woodland, and valley oak/grass), representing 2.5% of this habitat on site. The remaining 56 acres of impact are foraging habitat only (*i.e.*, habitat suitable only for foraging, including big sagebrush scrub, coastal scrubs and associations, *Eriodictyon* scrub, and Mexican elderberry), representing 1.3% of this habitat on site. A total of 53 acres of suitable nesting and/or foraging habitat would be temporarily impacted, of which 46 acres are nesting and foraging habitat and 7.5 acres are foraging habitat only.

The Cooper's hawk is still relatively widespread and common throughout its range. However, this species is a breeding raptor on site, and raptors in general are uncommon

and receive special protection from CDFG. Therefore, the loss of raptor nesting habitat would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 1,640 acres of suitable nesting and/or foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 25.7% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass and Walnut Woodland Wildlife Habitat). Of these impacts, 93 acres are nesting and foraging habitat, representing 4.8% of this habitat on site. The remaining 1,547 acres of impact are foraging habitat only, representing 34.8% of this habitat on site.

The Cooper's hawk is still relatively widespread and common throughout its range. However, this species is a breeding raptor on site, and raptors receive special protection from CDFG. Therefore, the loss of raptor nesting would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,744 acres (27.3%). Of these impacts, 141 acres are nesting and foraging habitat, representing 7.3% of this habitat on site. The remaining 1,603 acres of impact are foraging habitat only, representing 36.1% of this habitat on site.

The combined loss of 27.3% of nesting and/or foraging habitat, including 7.3% of foraging and nesting habitat and 36.1% of foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the

habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

As Cooper's hawks are highly mobile, it is unlikely that RMDP-related construction/grading activities would result in direct injury or mortality of adult birds. However, this species has been observed nesting within the RMDP area west of Grapevine Mesa in the undisturbed dry canyon woodlands (Guthrie 2000B) and adjacent to the Project site in the Entrada planning area north of the Santa Clara River (Bloom Biological 2007A). Absent mitigation, construction and/or grading activities associated with the proposed RMDP could adversely affect foraging and nesting Cooper's hawks. Foraging individuals may avoid construction areas, and if construction occurred during the breeding season, active nests could be disturbed or destroyed, and eggs and/or young could be destroyed, injured, or killed. Impacts on foraging behavior by adults during the rearing period could also affect the health of young, potentially resulting in reduced survivorship and reproductive success. Also, construction activities could cause females to abandon nests, resulting in the loss of the nest due to predators or exposure. These would be significant impacts (significance criteria 1 and 7), absent mitigation. Implementation of the SCP would not directly impact this species.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals. Because the species nests and forages on site in habitat that would be directly affected, build-out of the Specific Plan, VCC, and Entrada planning areas could adversely affect nesting Cooper's hawks. This would be a significant impact (significance criteria 1 and 7), absent mitigation.

Secondary Impacts

Short-term, construction-related impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas could potentially affect Cooper's hawks nesting or foraging in areas adjacent to construction zones. These impacts include construction-related fugitive dust, nesting and foraging disturbance from increased

human activity, noise and ground vibration, and nighttime illumination, which could modify essential behaviors of individuals, increase physiological stress, potentially increase their risk of predation, and potentially cause nest abandonment. Attraction of ravens to construction areas could also increase the risk of nest predation.

Potential long-term secondary effects resulting from RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas adjacent to nesting and foraging habitat include nighttime lighting; increased human activity; increased noise; harassment and predation by pet, feral, and stray cats and dogs, other mesopredators (particularly raccoons and opossums), and ravens; the use of pesticides, which could result in the loss of prey and secondary poisoning; and increased incidence of collisions with vehicles and man-made structures.

Both short-term and long-term secondary impacts would have a substantial adverse effect on this species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and/or foraging habitat for Cooper's hawk (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 87 acres (1.4%) permanent loss and 55 acres of temporary loss of nesting and/or foraging habitat, including
  - 35 acres (1.8%) of permanent loss and 45 acres of temporary loss of nesting and foraging habitat
  - 52 acres (1.2%) of permanent loss and 10 acres of temporary loss of foraging habitat only;
- Alternative 4 – 87 acres (1.4%) permanent loss and 50 acres of temporary loss of nesting and/or foraging habitat, including
  - 35 acres (1.8%) of permanent loss and 43 acres of temporary loss of nesting and foraging habitat

  - 52 acres (1.2%) of permanent loss and 7.1 acres of temporary loss of foraging habitat only;
- Alternative 5 – 101 acres (1.6%) permanent loss and 61 acres of temporary loss of nesting and/or foraging habitat, including
  - 44 acres (2.3%) of permanent loss and 48 acres of temporary loss of nesting and foraging habitat
  - 57 acres (1.3%) of permanent loss and 13 acres of temporary loss of foraging habitat only;
- Alternative 6 – 81 acres (1.3%) permanent loss and 58 acres of temporary loss of nesting and/or foraging habitat, including
  - 36 acres (1.9%) of permanent loss and 44 acres of temporary loss of nesting and foraging habitat
  - 45 acres (1.0%) of permanent loss and 14 acres of temporary loss of foraging habitat only; and
- Alternative 7 – 35 acres (0.5%) permanent loss and 71 acres of temporary loss of nesting and/or foraging habitat, including
  - 14 acres (0.7%) of permanent loss and 37 acres of temporary loss of nesting and foraging habitat
  - 21 acres (0.5%) of permanent loss and 34 acres of temporary loss of foraging habitat only.

Compared to Alternative 2 for nesting and/or foraging habitat, which would result in 104 acres (1.6%) of permanent loss and 53 acres of temporary impacts, Alternatives 3 through 7 would have reduced permanent impacts and similar to somewhat higher temporary impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat for Alternatives 3 through 7, with fewer impacts than Alternative 2, which would result in 48 acres (2.5%) of permanent loss. For temporary impacts, Alternatives 3 through 6 would have not substantially different to marginally different impacts compared to Alternative 2, which would result in 46 acres of temporary loss, and Alternative 7 would have somewhat reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 56 acres (1.3%) of permanent loss, Alternatives 3 through 6 would not have similar to somewhat different impacts and Alternative 7 would have substantially reduced impacts. Compared to Alternative 2 for temporary impacts to foraging habitat only, which would result in 7.5 acres of temporary loss, Alternatives 3 through 6 would not be substantially different, and Alternative 7 would be substantially higher.

The relatively greater difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

The overall permanent loss of nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be less than or similar in magnitude compared to Alternative 2. However, because nesting habitat would be lost under all of the alternatives, this impact would be considered a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. The direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Cooper's hawk (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,528 acres (23.9%) permanent loss of nesting and/or foraging habitat, including
  - 73 acres (3.8%) of permanent loss of nesting and foraging habitat
  - 1,455 acres (32.8%) of permanent loss of foraging habitat only;
- Alternative 4 – 1,481 acres (23.2%) permanent loss of nesting and/or foraging habitat, including
  - 68 acres (3.5%) of permanent loss of nesting and foraging habitat
  - 1,413 acres (31.8%) of permanent loss of foraging habitat only;
- Alternative 5 – 1,432 acres (22.4%) permanent loss of nesting and/or foraging habitat, including
  - 69 acres (3.6%) of permanent loss of nesting and foraging habitat
  - 1,363 acres (30.7%) of permanent loss of foraging habitat only;
- Alternative 6 – 1,157 acres (18.1%) permanent loss of nesting and/or foraging habitat, including

  - 42 acres (2.2%) of permanent loss of nesting and foraging habitat
  - 1,115 acres (25.1%) of permanent loss of foraging habitat only; and
- Alternative 7 – 1,071 acres (16.8%) permanent loss of nesting and/or foraging habitat, including
  - 45 acres (2.3%) of permanent loss of nesting and foraging habitat
  - 1,026 acres (23.1%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting and/or foraging habitat, which would result in 1,640 acres (25.7%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 93 acres (4.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 1,547 acres (34.8%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat only. These impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Cooper's hawk:

- Alternative 3 – 1,615 acres (25.3%) permanent loss of nesting and/or foraging habitat, including

  - 108 acres (5.6%) of permanent loss of nesting and foraging habitat
  - 1,507 acres (33.9%) of permanent loss of foraging habitat only;
- Alternative 4 – 1,568 acres (24.6%) permanent loss of nesting and/or foraging habitat, including
  - 103 acres (5.3%) of permanent loss of nesting and foraging habitat
  - 1,465 acres (33.0%) of permanent loss of foraging habitat only;
- Alternative 5 – 1,533 acres (24.0%) permanent loss of nesting and/or foraging habitat, including
  - 113 acres (5.8%) of permanent loss of nesting and foraging habitat
  - 1,420 acres (32.0%) of permanent loss of foraging habitat only;
- Alternative 6 – 1,238 acres (19.4%) permanent loss of nesting and/or foraging habitat, including
  - 78 acres (4.0%) of permanent loss of nesting and foraging habitat
  - 1,160 acres (26.1%) of permanent loss of foraging habitat only; and
- Alternative 7 – 1,106 acres (17.3%) permanent loss of nesting and/or foraging habitat, including
  - 59 acres (3.0%) of permanent loss of nesting and foraging habitat
  - 1,047acres (23.6%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting and/or foraging habitat, which would result in 1,744 acres (27.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 141 acres (7.3%) of permanent loss, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for the combined direct and indirect permanent loss of foraging habitat only, which would result in 1,602 acres (36.1%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer combined direct and indirect impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in impacts to nesting and

foraging habitat and substantial impacts to foraging habitat only. These combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would impede the use of a native wildlife nursery site; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to Cooper's hawk individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Suitable nesting and foraging habitat is present on site and, absent mitigation, construction/grading activities could result in disruption of foraging activities and destruction of nests and eggs and/or injury or mortality of young where Cooper's hawks are nesting, resulting in reduced survivorship and reduced reproductive success. Impacts to Cooper's hawk individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Short-term effects include construction-related noise, ground vibration, lighting, and disturbance from human activity that could disrupt foraging behavior and natal care and cause nest abandonment. Urban development could result in long-term secondary impacts, such as increased human activity; noise; nighttime lighting; harassment by pet, stray, and feral cats and dogs; secondary poisoning and loss of prey from use of pesticides; and increased incidence of collisions with vehicles and man-made structures.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to the Cooper's hawk: (1) impacts to individuals; (2) loss of suitable foraging and nesting habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting and foraging by this species has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if vegetation clearing and construction/grading activities occur during the breeding season, potentially resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also alter foraging behavior, reducing the health of young, or cause abandonment of nests due to human activity, noise, and ground vibration. Lighting could alter nesting behavior, induce physiological stress, or increase predation risk by nocturnal mesopredators. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable nesting and foraging habitat for the Cooper's hawk resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,106 acres (17.3%) under Alternative 7 to 1,744 acres (27.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and would alter its use of the Project area for foraging, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the Cooper's hawk in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 3,612 acres of the suitable habitat for this species in the River Corridor SMA, High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging and nesting activities by the Cooper's hawk could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators and exposure. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys within 500 feet of disturbance zones and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-

term development-related impacts include increased noise; lighting; increased human activity; pesticides, which may cause direct and secondary poisoning and loss of prey; predation and harassment by pet, stray, and feral cats and dogs, other mesopredators, and ravens; and increased collisions with vehicles and man-made structures. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 3,612 acres of suitable nesting and foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide Cooper's hawks with relatively undisturbed habitat for foraging and nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Cooper's hawks by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning, loss of prey, and loss of burrow sites. Provision of a large, relatively undisturbed open space system providing nesting and foraging habitat away from development areas will also help mitigate for increased collisions with vehicles and manmade structures.

IMPACT 4.5-120 IMPACTS TO INDIVIDUALS – COOPER'S HAWK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Cooper's hawk individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Cooper's hawk individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance

of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Cooper's hawk individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-121 LOSS OF HABITAT – COOPER'S HAWK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for Cooper's hawk through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 380 acres of suitable nesting and/or foraging habitat for Cooper's hawk**.** The High Country SMA will preserve and enhance 2,199 acres of suitable nesting and/or foraging habitat for Cooper's hawk.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for Cooper's hawk through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site, which provides foraging habitat for Cooper’s hawk. The preservation of this vegetation

type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat shall be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the Cooper's hawk would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-122 SECONDARY IMPACTS – COOPER'S HAWK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on Cooper's hawk associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as increased human activity, nighttime lighting, and potentially increased incidence of collisions with vehicles and manmade structures. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and which generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for

the effects of increased human activity and the increase in incidence of vehicle collisions. This open space area will also help mitigate for increased incidence of collisions with vehicles and man-made structures by providing a large undisturbed area to support nesting and foraging.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Cooper's hawk, including short-term construction-related dust, noise, ground vibration, and increased human activity, as well as long-term effects such as increased human activity; harassment by pet, stray, and feral cats and dogs; secondary poisoning and loss of prey due to the use of pesticides; and increased incidence of collisions with vehicles and man-made structures.

BIO-52 and BIO-56, as described above, will mitigate the effects of construction noise and increased human activity by identifying nest sites and providing for buffers between nests and construction activities.

BIO-1 through BIO-16 and BIO-19 through BIO-22, as described above, will mitigate for increased human activity and collisions in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Cooper's hawk would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

FERRUGINOUS HAWK (WINTERING) (BCC, WL)

Life History

The ferruginous hawk (*Buteo regalis*) occurs throughout western North America from southernmost Canada between the Great Plains and Rocky Mountains, south to northern Arizona and New Mexico. This species breeds from southeast Alberta and extreme southwest Manitoba south to the northwest corner of Texas, west to the Great Basin, Columbia River Basin regions of eastern Oregon and southeast Washington. It was more recently discovered breeding in California (Small 1994). The ferruginous hawk most commonly winters from southern California, Colorado, Arizona, and New Mexico to northern Texas. Northern populations are completely migratory, while birds from southern breeding locations appear to migrate short distances or to be sedentary (Bechard and Schmutz 1995). The ferruginous hawk is an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges of California (Polite and Pratt 1999).

The ferruginous hawk forages in open grasslands, agriculture (primarily grazing lands), sagebrush flats, desert scrub, and fringes of pinyon–juniper habitats (Polite and Pratt 1999). Birds seem to show a strong preference for elevated nest sites (boulders, creek banks, knolls, low cliffs, buttes, trees, large shrubs, utility structures, and haystacks), but will nest on nearly level ground when elevated sites are absent and when located far from human activities (Bechard and Schmutz 1995). Their winter range consists of open terrain from grassland to desert. West of the Rocky Mountains, grassland and arid areas of California, Arizona, and New Mexico are used heavily where prairie dogs, lagomorphs (rabbits and hares), ground squirrels, or pocket gophers are abundant. Amphibians, reptiles, and birds are occasionally taken. Hunting occurs from early morning to late afternoon and follows one of four types of pursuits: still hunting, short-distance strikes, aerial hunting, and hovering (Bechard and Schmutz 1995; NatureServe 2008).

Nest-building generally occurs in March in southern to mid-latitudes and birds occur on breeding areas from late February through early October (NatureServe 2008). In California, it has been reported that this species prefers native grassland and shrubland habitats over cropland, and areas with no perches for their nest sites (Janes 1985). Clutch size for this species is usually two to four with an incubation period of about 32 to 33 days. Young fledge in 35 to 50 days (Natureserve 2008).

The major threat to this species is the loss of breeding and wintering habitat. Local declines of ferruginous hawk have been noted (*e.g.*, Woffinden and Murphy 1989), but a widespread decline was not evident as of the early 1990s (57 FR 37507–37513; Olendorff 1993). Olendorff (1993) attributed population declines to the effects of cultivation, grazing, poisoning, and controlling small mammals, mining, and fire in nesting habitats, with cultivation being the most serious source of impact. Impacts from collisions with stationary or moving structures or objects,

pesticides and other contaminants, and shooting and trapping are not considered significant for this species.

Survey Results

The Project area is outside the ferruginous hawk's breeding range and it is not expected to nest on site. It was not observed in the numerous spring avian surveys conducted between 1988 and 2008. Because the spring surveys would have been unlikely to detect this species, a focused winter bird survey was conducted in 2008 by Bloom Biological, Inc. (2008) during the time period this species would be expected to occur on site if it was using the Project area as winter foraging habitat. During this study, ferruginous hawks were observed almost every day in eastern alfalfa fields, Wolcott agricultural fields, Potrero Canyon, and other agriculture fields along the Santa Clara River. The species was the most common winter raptor observed on site during the study and it was estimated that seven to 12 individuals were using the Project area.

Suitable winter foraging habitat for the ferruginous hawk within the Project area includes agriculture (*e.g.*, grazed, fallow/disked, alfalfa, but not intensive row crops; California annual grassland; purple needlegrass; disturbed land (excluding dense, weedy areas); and open scrub habitats, including alluvial scrub, arrow weed scrub, big sagebrush scrub, and coastal scrub alliances and associations (excluding dense California sagebrush scrub–undifferentiated chaparral and coyote brush scrub). A total of 9,417 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 266 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.8% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland,

Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A total of 103 acres would be temporarily impacted.

The ferruginous hawk is a wide-ranging species that only occurs on site as a winter visitor. On site, this species frequently uses Potrero Canyon where there would be substantial permanent RMDP impacts. Although the permanent loss of 266 acres and temporary impacts to habitat in Potrero Canyon and elsewhere resulting from implementation of the RMDP would be relatively small in the context of the more than 9,400 acres of suitable foraging habitat in the Project area, impacts in Potrero Canyon would adversely affect foraging in this area which is frequently used by the ferruginous hawk. Therefore, these permanent and temporary impacts would have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

A total of 4,529 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 48.1% of these habitats on site (**Figure 4.5-125**, Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A substantial portion of this habitat loss (1,581 acres; 34.9%) would occur in the agricultural areas adjacent to the Santa Clara River where the ferruginous hawk was regularly observed during the winter in 2008 (Bloom Biological 2008).

Although the ferruginous hawk is a wide-ranging species that occurs on site only as a winter visitor, the permanent loss of 4,529 acres (48.1%) of winter foraging habitat that would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; and substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 4,795 acres (50.9%). As with indirect permanent

impacts alone, this combined direct and indirect permanent loss of winter foraging habitat would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; and substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The ferruginous hawk is a mobile species that forages on site during the winter and it is highly unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality of individual adult birds. Foraging individuals would likely avoid areas under construction due to the lack of prey and construction activities. The ferruginous hawk does not breed on site so nests with eggs or young would not be affected. Implementation of the SCP would not directly impact this species. Because only foraging activity potentially would be altered and because substantial alternative foraging areas would be available during construction, direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The ferruginous hawk is a mobile species and it is highly unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. Foraging individuals would likely avoid areas under construction due to the lack of prey and construction activities. The ferruginous hawk does not breed on site so nests with eggs or young would not be affected. Because only foraging activity potentially would be altered and because substantial alternative foraging areas would be available during construction, indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, fugitive dust, and general human activity. These effects may deter ferruginous hawks from foraging in areas near construction activities. Construction activities may also reduce the abundance of their prey in areas near these activities.

Potential long-term secondary impacts associated with urban development include increased human activity; use of rodenticides in areas adjacent to development that could cause secondary poisoning and reduce prey abundance; and potential harassment and predation by pet, stray, and

feral cats and dogs. These secondary impacts may deter ferruginous hawks from foraging in some undeveloped areas in close proximity to urban development.

Because the ferruginous hawk is a wide-ranging species that uses the site as winter foraging habitat and because of the limited time period (construction-related effects) and limited area over which long-term secondary effects may occur, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the ferruginous hawk (**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 246 acres (2.6%) of permanent loss and 147 acres of temporary loss;
- Alternative 4 – 227 acres (2.4%) of permanent loss and 153 acres of temporary loss;
- Alternative 5 – 288 acres (3.1%) of permanent loss and 133 acres of temporary loss;
- Alternative 6 – 278 acres (3.0%) of permanent loss and 149 acres of temporary loss; and
- Alternative 7 – 133 acres (1.4%) of permanent loss and 475 acres of temporary loss.

Compared to Alternative 2, which would result in 266 acres (2.8%) of permanent habitat loss and 103 acres of temporary impacts, the permanent loss of habitat would be marginally to somewhat reduced under Alternatives 3 and 4, marginally to somewhat higher under Alternatives 5 and 6, and substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat higher and would be substantially higher under Alternative 7. The difference for direct permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

The overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3, 4, and 7 would be marginally to substantially reduced and would be marginally to somewhat higher under Alternatives 5 and 6 compared to Alternative 2, and temporary impacts would be somewhat higher to substantially higher. However, under each of the Alternatives, impacts would occur in Potrero Canyon, thus adversely affecting foraging activities in this area. Therefore, these direct impacts to habitat would be significant absent mitigation under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the ferruginous hawk ((**Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat**)**:

- Alternative 3 – 4,313 acres (45.8%) of permanent loss;
- Alternative 4 – 4,137 acres (43.9%) of permanent loss;
- Alternative 5 – 4,033 acres (42.8%) of permanent loss;
- Alternative 6 – 3,573 acres (37.9%) of permanent loss; and
- Alternative 7 – 3,053 acres (32.4%) of permanent loss.

Compared to Alternative 2, which would result in 4,529 acres (48.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would have substantially reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives and there would be successive reductions under Alternatives 4 through 7 due to other differences in the Project footprints. Alternative 7 would have the least amount of impact because of the pullback from the Santa Clara River and its tributaries, as well as avoidance of some agricultural areas adjacent to the River, but the permanent loss of 3,053 acres (32.4%) of foraging habitat under Alternative 7, including 830 acres of agriculture, would still be a substantial loss.

Although the overall loss of habitat resulting from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be still be substantially adverse and therefore significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and

Entrada planning areas would result in the following impacts to suitable habitat for the ferruginous hawk:

- Alternative 3 – 4,559 acres (48.4%) of permanent loss;
- Alternative 4 – 4,364 acres (46.3%) of permanent loss;
- Alternative 5 – 4,322 acres (45.9%) of permanent loss;
- Alternative 6 – 3,851 acres (40.9%) of permanent loss; and
- Alternative 7 – 3,186 acres (33.8%) of permanent loss.

Compared to Alternative 2, which would result in 4,795 acres (50.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons described above for indirect permanent impacts. Although the combined direct and indirect permanent loss of suitable habitat for the ferruginous hawk occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would still be substantially adverse and therefore significant, absent mitigation.

Impacts to Individuals

The potential for impacts to ferruginous hawk individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Adult birds would likely avoid impacts during construction activities by avoiding or leaving construction areas. Further, because the species does not nest on site, nests with eggs and young would not be affected. Because only foraging activity may be altered during construction and because substantial alternative habitat would be available, impacts to ferruginous hawk individuals occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7. These potential short-term and long-term secondary impacts would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related noise and dust, increased human activity, and potential reduction of prey in areas near construction areas. Potential long-term secondary

impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include increased human activity; use of rodenticides; and harassment and predation by pet, stray, and feral cats and dogs, as described above for Alternative 2.

Because the ferruginous hawk is a wide-ranging species that uses the site as winter foraging habitat and because of the limited time period (construction-related effects) and limited area over which long-term secondary effects may occur, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Short-term and long-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in one significant impact to the ferruginous hawk: loss of suitable foraging habitat.

The combined permanent loss of suitable foraging habitat for the ferruginous hawk resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 3,186 acres (33.8%) under Alternative 7 to 4,795 acres (50.9%) under Alternative 2. This would be a substantial loss of suitable foraging habitat for this species and would alter its use of the Project area for winter foraging. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support winter foraging by the ferruginous hawk in the Project vicinity. Implementation of these mitigation measures will result in protection and management of a minimum of approximately 3,000 acres of the suitable habitat for this species in the River Corridor SMA, High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

IMPACT 4.5-123 LOSS OF HABITAT – FERRUGINOUS HAWK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the ferruginous hawk through habitat protection in the River Corridor SMA and High Country SMA where the species is most likely forage in the Project area after build-out.

SP-4.6-21 through SP-4.6-25 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and High Country SMA, as well as guidelines for ownership, management, and public access. The River Corridor SMA and High Country SMA combined will protect and manage a minimum of about 2,040 acres of suitable foraging habitat for the ferruginous hawk.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for the ferruginous hawk through habitat protection, restoration and enhancement, and management in the Salt Creek area, where the species may forage during the winter.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. This area includes about 955 acres of suitable foraging habitat for the ferruginous hawk.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of foraging habitat for the ferruginous hawk would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

MERLIN (WINTERING) (WL)

Life History

The merlin (*Falco columbarius*) is a small falcon that occurs in North America, Europe, Asia, and the Middle East. In North America, the merlin breeds from Alaska eastward through most of Canada to Newfoundland and Maine, and south to Washington. Between 1995 and 2004, the species expanded its breeding range to include northern New York and northern New England (Sodhi *et al.* 2005). The species winters in most of its breeding range and southward to northern South America (AOU 1998; Sodhi *et al.* 2005). The Caribbean Islands are also a key wintering area (Clark and Wheeler 1987).

The merlin is an uncommon to rare winter visitor in California from September to May and is not known to breed in the state (Garrett and Dunn 1981; Zeiner *et al.* 1990A). Merlins may occur in most of the western half of the state below 1,500 meters (3,900 feet) AMSL, including the Mojave Desert to the east and the Channel Islands to the west. According to Remsen (1978), wintering birds are concentrated along the coast and in the Central Valley but numbers have declined markedly in California in recent decades.

The merlin uses a wide variety of semi-open to open habitats during breeding and wintering (Garrett and Dunn 1981; Sodhi *et al.* 2005). Foraging birds occur along coastlines and in grasslands, savannahs, open woodlands, lakes, wetlands, edges, and communities in early successional stages. In southern California, merlins are rarely found in heavily wooded areas or over open deserts. Habitats used can range from agricultural fields and annual grasslands to ponderosa pine and montane hardwood–conifer woodlands (Zeiner *et al.* 1990A). Merlins often use areas with undulating topography (County of Riverside 2008). Individuals in urban populations perch on buildings, utility poles, and tall trees (Oliphant 1974; Servheen 1985; Warkentin *et al.* 1990). Tree stands used for cover and nesting are frequently close to bodies of water and adjacent to open space areas for foraging.

The merlin feeds primarily on small birds usually weighing less than 50 grams (0.11 pound). It also feeds on small mammals, reptiles, and insects (Sodhi *et al.* 2005). Merlins usually attack from a perch with a wide view. Most prey are captured mid-air, but some are caught on the ground or while perching. Hunting mostly takes place in the early morning or late afternoon (Dekker 1988; Sodhi *et al.* 2005).

Use of organochlorine pesticides, especially DDT and its metabolite DDE, caused declines in the merlin population between about 1950 and 1980 due to eggshell thinning. These compounds accumulated in merlins that fed on contaminated prey, interfering with their calcium metabolism. Currently, loss of suitable habitat may be the major factor affecting merlins in North America (Cade 1982; Oliphant 1985), although this species can use urban areas for nesting. Nesting merlins appear to be fairly resilient to human disturbance if they are not directly threatened

(Sodhi *et al.* 2005). There is some evidence that direct disturbance of nest trees (*e.g.*, by climbing) early during incubation can cause nest abandonment (Oliphant 1974), but a subsequent study of the same population did not document this behavior (Sodhi *et al.* 2005). Frequent nest site visits and radio-tagging do not appear to affect reproductive success or survival of this species (Grier and Fyfe 1987; Sodhi *et al.* 1991).

Survey Results

The Project area provides suitable foraging habitat for migrant and wintering merlins. Avian surveys have been conducted in the riparian areas of the Santa Clara River and Castaic Creek from 1988 through 2008. Focused surveys for wintering raptors in 2007 included four observations of wintering or migrating merlins between March 4 and March 23 (Bloom Biological, Inc. 2007A). This survey covered all habitats within the Santa Clara River floodplain and approximately 0.5 mile on each side of the River along a stretch of 25 miles and its major tributaries in and around the Project area. Bloom Biological, Inc. (2008) expanded the survey area to include upland areas as well as the Santa Clara River from November 2007 through February 2008 and observed five or six individuals hunting over agricultural fields along the Santa Clara River and in Potrero Canyon between December 21 and January 2.

Merlins were not observed during bird surveys in any other year between 1988 and 2007. These other surveys for upland and riparian bird species were generally conducted in the spring to mid-summer (April through June) throughout the Project area. Therefore, the lack of observations of merlins during these surveys is not indicative of their status on site because occasional winter migrants would not have been observed during spring or summer surveys.

Based on the Bloom Biological, Inc. (2007A, 2008) observations, the merlin is considered to occur throughout the site during winter in suitable foraging habitat, including agriculture, disturbed land, California annual grassland, purple needlegrass, woodlands (California walnut woodland, coast live oak woodland, mixed oak woodland, valley oak woodland), valley oak/grass, and riparian communities (alluvial scrub, arrow weed scrub, herbaceous wetland, Mexican elderberry, mulefat scrub, river wash, southern willow scrub, southern coast live oak riparian forest, southern cottonwood–willow riparian). A total of 7,679 acres of suitable wintering and migration foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 302 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.9% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 192 acres would be temporarily impacted.

The merlin is still a wide-ranging species, is only expected to occur on site as a winter migrant, and forages in a wide variety of habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time. Therefore, the permanent loss of 302 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,225 acres of suitable habitat would be permanently loss through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 42.0% of suitable habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat).

While a relatively large amount and percentage of suitable foraging habitat for the merlin would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada

planning areas, this habitat is only used by wintering and migrant individuals during the winter months. Wintering and migrating merlins are not restricted to any one migration route or wintering habitat area and use a variety of habitats throughout the state. They are somewhat nomadic during the non-breeding period in the southern portion of the state. In addition, approximately 3,181 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area. For these reasons, this loss of foraging habitat would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas or impede the use of native wildlife nursery sites (nests); cause the species to drop below self-sustaining levels on site or range-wide; threaten to eliminate the species on site or range-wide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,527 acres (45.9%). For the reasons provided above for indirect permanent impacts, this loss of habitat would not have a substantial adverse effect on wintering and migrant individuals (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species. Foraging birds may avoid active construction areas, thus altering their foraging behavior on site. Vegetation clearing and grading would not result in destruction of young or eggs of this species because it does not nest on site. Implementation of the SCP would not directly impact this species. Because only foraging behavior in construction areas would be affected and because there would be substantial alternative foraging habitat available, RMDP-related construction/grading activities would not have a substantial direct adverse effect on this species; interfere with the movement of the species between important habitat areas or impede the use of native wildlife nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals. Wintering and migrating adults are highly mobile and would not be directly affected by construction activities. Only foraging activities in construction areas would be affected, and substantial alternative foraging habitat would be available. Therefore, indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the winter have the potential to affect foraging by merlins in areas adjacent to construction zones. These short-term secondary impacts could include exposure to noise, fugitive dust, and increased human activity.

Potential long-term development-related secondary impacts along the open space–urban development edge include increased human activity; potential harassment by humans and pet, stray, and feral cats and dogs, and other mesopredators; and loss of prey and secondary poisoning from pesticides, such as insecticides and rodenticides.

Because the merlin only occurs on site during the winter and approximately 3,181 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area, these potential secondary impacts would not have a substantial adverse effect on this species; interfere substantially with the movement of the species between important habitat areas or impede the use of native wildlife nursery sites (nests); cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the merlin (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 266 acres (3.5%) of permanent loss and 237 acres of temporary loss;
- Alternative 4 – 251 acres (3.3%) of permanent loss and 238 acres of temporary loss;
- Alternative 5 – 314 acres (4.1%) of permanent loss and 228 acres of temporary loss;
- Alternative 6 – 307 acres (4.0%) of permanent loss and 232 acres of temporary loss; and
- Alternative 7 – 133 acres (1.7%) of permanent loss and 528 acres of temporary loss.

Compared to Alternative 2, which would result in 302 acres (3.9%) of permanent habitat loss and 192 acres of temporary impacts, the permanent loss of habitat would be somewhat reduced under Alternatives 3 and 4, not substantially different under Alternatives 5 and 6, and would be substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat higher and would be substantially increased under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in fewer permanent impacts and greater temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the merlin (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat, and **Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 3,073 acres (40.0%) of permanent loss;
- Alternative 4 – 2,920 acres (38.0%) of permanent loss;
- Alternative 5 – 2,862 acres (37.3%) of permanent loss;
- Alternative 6 – 2,607 acres (34.0%) of permanent loss; and
- Alternative 7 – 2,144 acres (27.9%) of permanent loss.

Compared to Alternative 2, which would result in 3,225 acres (42.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7.

The overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, but still substantial. However, because the merlin only uses the Project area for wintering and during migration, the approximately 3,181 acres of foraging habitat that would remain in the River Corridor SMA, High Country SMA, and Salt Creek area would be adequate for these individuals. For these reasons, indirect permanent impacts (Loss of Habitat) would be adverse but not significant for Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the merlin:

- Alternative 3 – 3,339 acres (43.5%) of permanent loss;
- Alternative 4 – 3,171 acres (41.3%) of permanent loss;
- Alternative 5 – 3,176 acres (41.4%) of permanent loss;
- Alternative 6 – 2,914 acres (37.9%) of permanent loss; and
- Alternative 7 – 2,277 acres (29.7%) of permanent loss.

Compared to Alternative 2, which would result in 3,527 acres (45.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect permanent impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be successive reductions in the Specific Plan and Entrada planning areas under these alternatives, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7.

Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the merlin occurring as a result of implementation of the

RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial. However, as described above for indirect permanent impacts, the 3,181 acres of foraging habitat that would remain in the River Corridor SMA, High Country SMA, and Salt Creek area would be adequate for wintering and migrant merlins. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to merlin individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Because adult merlins are highly mobile and the species does not nest on site, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3), and Entrada planning areas would not result in injury or mortality of individuals. Foraging merlins, however, would probably avoid active construction areas, but substantial alternative foraging habitat would be available. Therefore, impacts to individuals would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related noise and increased human activity. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than during implementation of the RMDP and the SCP because of the much larger area of impact.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity, increased harassment and predation, and loss of prey and secondary poisoning, as described above for Alternative 2.

Because approximately 3,181 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area, which would be adequate to support wintering and migrant merlins, short-term and long-term secondary impacts would be adverse but not significant.

Mitigation Strategy and Summary

No mitigation is required for impacts to the merlin because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system containing approximately 3,086 acres of foraging habitat for this species. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, lighting, fugitive dust, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; dust; and pesticides will also be mitigated through a variety of measures.

PRAIRIE FALCON (NESTING) (BCC, WL)

Life History

The prairie falcon (*Falco mexicanus*) has a broad geographic range and occurs in most of the western and central United States, southwestern portions of Canada, and Mexico. Its breeding and summer range extends north to south-central British Columbia, south Alberta, and southernmost Saskatchewan. It breeds east to the Badlands and plains of North Dakota; western Nebraska; east-central Colorado; south to Sonora, Mexico; and west to Washington, Oregon, and California (Steenhof 1998). The species winters east to Minnesota, Iowa, Missouri, Oklahoma, and Texas, and occasionally in Illinois, Wisconsin, Indiana, and Michigan. Its wintering range extends west to Vancouver, British Columbia, Washington, Oregon, California, and Baja California, and south to central Mexico (Steenhof 1998). Prairie falcons are a permanent resident throughout California except in the northwest and in mountain areas (Remsen 1978). The total population of prairie falcon in California is relatively low compared to other portions of the species' range (Remsen 1978).

Prairie falcons inhabit open habitats in North America, including arid plains and steppe habitats. In the western states they prefer chaparral, desert grasslands, and creosote bush habitats. Nesting areas are on cliffs or bluffs near these open habitats. During the spring and fall migration, as well as overwintering, prairie falcons use primarily the same open scrub and grassland habitats for foraging purposes (Steenhof 1998).

Prairie falcons primarily feed on ground squirrels throughout their range, especially when numbers of squirrels increase in the spring and summer months in correspondence with falcon nesting and brood rearing. When their ground squirrel availability is limited, prairie falcons will prey on open habitat birds, most commonly horned larks (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*), and also supplement their diet with lizards and insects (Steenhof 1998). They forage in areas with low vegetation, typically capturing prey near the ground, but are capable of taking birds in the air.

The prairie falcon begins breeding in early spring and eggs can be laid into late spring. They primarily nest on sheltered ledges of cliffs and embankments at heights of 10 to more than 100 meters (33 to 328 feet) (Roppe *et al.* 1989; Steenhof 1998). They usually lay four or five eggs that have an incubation time of 29 to 30 days and nestlings fledge 29 to 47 days after hatching (Steenhof 1998). The young begin to disperse at 65 days, traveling only a short distance from the nest site (Steenhof 1998).

The prairie falcon is not a true migrant, particularly in California, but more of a nomadic wanderer during the non-breeding months in response to prey availability. The prairie falcon is not territorial in the winter. In California, the average defended territory includes a 300- to 400-meter (984 to 1,312 feet) radius around the nest and 100 meters (328 feet) above the nest.

Identified threats to prairie falcons related to development and agriculture include human disturbance, such off-road vehicle use, rock climbing, and hiking near nesting areas; grazing; invasive exotic plants; energy development where disturbance is excessive; electrocution from power lines; collisions with wires, structures, and ground and air vehicles; drowning in stock tanks; and pesticides, such as DDE, which cause eggshell thinning (Nature Conservancy 2001). Use of rodenticides could reduce prey and result in secondary poisoning. Altered fire regimes may also affect foraging behavior by this species, which could be adverse or beneficial (DeLong and Steenhof 2004). Prairie falcons typically select unburned areas with a heterogeneous matrix of native shrub and grassland, but fire suppression may be adverse. Periodic natural fire regimes in fire-dependent communities may actually be beneficial (Tesky 1994).

Survey Results

Suitable foraging habitat for the prairie falcon is present throughout the Project area and individuals have been occasionally observed on site. Guthrie observed two prairie falcon individuals during surveys during spring/summer avian surveys: one individual was detected in April 2000 in Potrero Canyon and Long Canyon areas, and the other was observed in July 2001 along Castaic Creek between the confluence with the Santa Clara River and I-5 (Guthrie 2000D; Guthrie 2001A). Dudek and Associates observed one individual in the Salt Creek watershed in late November 2005 (2006B) and an incidental sighting occurred in late August 2007 over Salt Creek within the High Country SMA (Trow 2007). Bloom Biological, Inc. (2007A) observed one individual flying northward over the confluence of Salt Creek and the Santa Clara River in April 2007. In December 2007 and January 2008, at least two individuals were observed on several occasions in Potrero Canyon; and two other individuals were observed along the Santa Clara River on other occasions (Bloom Biological, Inc. 2008). These scattered, but consistent, observations indicate that the prairie falcon uses the Project area regularly.

Limited suitable nesting habitat (*i.e.*, cliff ledges and rock outcrops) is present in the High Country SMA, but nesting by the prairie falcon has not been documented on site in this area (Dudek and Associates 2006B). Additionally, Bloom Biological, Inc. (2008) noted that there were no known nests in the area. Because nesting has not been documented on site, the relatively few observations of prairie falcons over multiple survey years, and the ability of prairie falcons to travel long distances to forage in relation to prey availability, these observations are likely nomadic or regionally resident foraging individuals. For this reason, this analysis assumes that the prairie falcon's use of the Project area is limited to foraging. Furthermore, if the species were to nest on site, nesting would occur in the High Country SMA and not in areas planned for development.

Suitable foraging habitat in the Project area includes agriculture, disturbed land, California annual grassland, purple needlegrass, and valley oak/grass habitats. A total of 5,579 acres of suitable foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 212 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.8% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 94 acres would be temporarily impacted.

The prairie falcon is still a wide-ranging species that infrequently forages in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time. Therefore, the permanent loss of 212 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,100 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 55.6% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat).

The prairie falcon is a wide-ranging species that infrequently occurs on site. The infrequent observations of the prairie falcon on site indicate that the Project area is not critically important for this species and that it probably uses the site opportunistically for foraging. The lack of evidence of nesting indicates that the site is not important for supporting nesting pairs and their offspring. In addition, more than 1,400 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area. The permanent loss of 3,100 acres (55.6%) of foraging habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas, while adverse, would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,312 acres (59.4%). For the reasons cited above for indirect permanent impacts, the loss of this foraging habitat from the combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species. Foraging birds may avoid active construction areas, thus altering their foraging behavior on site. Vegetation clearing and grading would not result in destruction of young or eggs of this species because it does not nest on site. Implementation of the SCP would not directly impact this species. Because only foraging behavior in construction areas would be affected and because there would be substantial alternative foraging habitat available, RMDP-related construction/grading activities would not have a substantial direct adverse

effect on this species; interfere with the movement of the species between important habitat areas or impede the use of native wildlife nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals. Wintering and migrating adults are highly mobile and would not be directly affected by construction activities. Only foraging activities in construction areas would be affected, and substantial alternative foraging habitat would be available. Therefore, indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, fugitive dust, and general human activity. These effects may deter prairie falcons from foraging in areas near construction activities. Construction activities may also reduce the abundance of their prey in areas near construction activities.

Potential long-term secondary impacts associated with urban development include increased human activity; use of pesticides in areas adjacent to development that could cause secondary poisoning and reduce prey abundance; and potential harassment and predation by pet, stray, and feral cats and dogs. These secondary impacts may deter prairie falcons from foraging in some undeveloped areas in close proximity to urban development.

Because the prairie falcon is a wide-ranging species that occasionally occurs on site and because of the limited time period (for construction-related effects) and limited area over which long-term secondary effects may occur, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the prairie falcon (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 197 acres (3.5%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 179 acres (3.2%) of permanent loss and 142 acres of temporary loss;
- Alternative 5 – 234 acres (4.2%) of permanent loss and 118 acres of temporary loss;
- Alternative 6 – 240 acres (4.3%) of permanent loss and 132 acres of temporary loss; and
- Alternative 7 – 112 acres (2.0%) of permanent loss and 438 acres of temporary loss.

Compared to Alternative 2, which would result in 212 acres (3.8%) of permanent habitat loss and 94 acres of temporary impacts, the permanent loss of habitat would be somewhat reduced under Alternatives 3 and 4, would be somewhat higher under Alternatives 5 and 6, and would be substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat higher and would be substantially higher under Alternative 7. The difference for permanent and temporary impacts under Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent and temporary loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the prairie falcon (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,966 acres (53.2%) of permanent loss;
- Alternative 4 – 2,832 acres (50.8%) of permanent loss;
- Alternative 5 – 2,778 acres (49.8%) of permanent loss;
- Alternative 6 – 2,558 acres (45.8%) of permanent loss; and
- Alternative 7 – 2,099 acres (37.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,100 acres (55.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would have somewhat reduced impacts compared to Alternative 3 because VCC would not be constructed under these alternatives and there would be successive reductions under these alternatives due to other differences in the Project footprints. Alternative 7 would have the least amount of impact because of the pullback from the Santa Clara River and its tributaries and avoidance of some agricultural areas adjacent to the River.

The prairie falcon is a wide-ranging species that infrequently occurs on site. The infrequent observations of the prairie falcon on site indicate that the Project area is not critically important for this species and that it probably uses the site opportunistically for foraging. The lack of evidence of nesting indicates that the site is not important for supporting nesting pairs and their offspring. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the prairie falcon occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial. However, as described above for indirect permanent impacts, the more than 1,400 acres of foraging habitat that would remain in the River Corridor SMA, High Country SMA, and Salt Creek area would be adequate for foraging prairie falcons. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the prairie falcon:

- Alternative 3 – 3,163 acres (56.7%) of permanent loss;
- Alternative 4 – 3,012 acres (54.0%) of permanent loss;
- Alternative 5 – 3,012 acres (54.0%) of permanent loss;

- Alternative 6 – 2,797 acres (50.1%) of permanent loss; and
- Alternative 7 – 22,211 acres (39.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,312 acres (59.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons described above for indirect permanent impacts. Although reduced compared to Alternative 2, this loss of habitat under Alternatives 3 through 7 would still be substantial. However, more than 1,400 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area. As with Alternative 2, and for the reasons cited for indirect permanent impacts, the combined direct and indirect permanent loss of suitable habitat for the prairie falcon occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for impacts to prairie falcon individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Because adult prairie falcons are highly mobile and the species does not nest on site, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3), and Entrada planning areas would not result in injury or mortality of individuals. Foraging prairie falcons, however, would probably avoid active construction areas, but substantial alternative foraging habitat would be available. Therefore, impacts to individuals would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related noise and dust, increased human activity, and potential reduction of prey in areas near construction areas. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas include increased human activity; use of pesticides; and harassment and predation by pet, stray, and feral cats and dogs, as described above for Alternative 2.

Because the prairie falcon is a wide-ranging species that occasionally occurs on site, and because of the limited time period (for construction-related effects) and limited area over which long-term secondary effects may occur, these short-term and long-term secondary impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Short-term and long-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the prairie falcon because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system containing more than 1,400 acres of foraging habitat for this species. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, fugitive dust, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as increased human activity; pet, stray, and feral cats and dogs; dust; and pesticides will also be mitigated through a variety of measures.

SHARP-SHINNED HAWK (NESTING) (WL)

Life History

The sharp-shinned hawk (*Accipiter striatus*) has a broad geographic range, occurring over much of the United States, including Alaska, and throughout Canada and Mexico (Bildstein and Meyer 2000). The sharp-shinned hawk breeds from Alaska southward throughout much of Canada, the northern lower 48 states, the Rocky Mountains and mountains of the far west, parts of the Gulf Coast states, and the highlands of Mexico (Terres 1980). In southern California, it is a fairly common migrant and winter resident. The sharp-shinned hawk potentially breeds south to the Coast Ranges to about 35° latitude and within scattered locations in the Transverse and Peninsular ranges, but sparingly in mid-elevation habitats (Zeiner *et al.* 1990A).

Sharp-shinned hawks primarily occur in riparian forest and woodlands (NatureServe 2007), including ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats (Joy *et al.* 1984; Zeiner *et al.* 1990A; NatureServe 2007). The sharp-shinned hawk is highly migratory and winters from the lower 48 states to Panama and various Caribbean islands (AOU 1998). It nests in most forest types but shows a preference for young stands of dense boreal forest (Wiggers and Kritz 1991; Zeiner *et al.* 1990A). During spring and fall migration, sharp-shinned hawks use similar riparian and forest and woodland habitats, but also old fields, abandoned agricultural lots, chaparral, and mixed hardwood (Zeiner *et al.* 1990A; NatureServe 2007).

Sharp-shinned hawks feed mostly on small birds, but adults also take small mammals during the incubation and fledgling stages of reproduction (Joy *et al.* 1984). Sharp-shinned hawks hunt in forested areas throughout the tree canopy, along hedgerows, the edge of woodlands, brushy pastures, fields, and shorelines where migrating shorebirds and songbirds are found (Bildstein and Meyer 2000). During the winter they also forage in more open space and feedlots or bird feeders where prey are abundant (Bildstein and Meyer 2000).

Sharp-shinned hawks breed from early April through July (Bildstein and Meyer 2000; Zeiner *et al.* 1990A). Nests are typically constructed in densely forested areas in the lower part of the canopy, with an average distance of about 2.5 miles between nest sites (Zeiner *et al.* 1990A). While conifers are preferred for nests, deciduous trees are used in areas where conifers are sparse or absent (Bildstein and Meyer 2000; Wiggers and Kritz 1991). Clutch size is usually four or five and incubation lasts 30 to 32 days (Zeiner *et al.* 1990A; NatureServe 2007). The female incubates the eggs, while the male provides food for the female during incubation. The young first fly about 23 days after hatching (Brown and Amadon 1968). Breeding territories are commonly reused; however, occupation of previously used nests is rare (Bildstein and Meyer 2000).

Sharp-shinned hawk populations had experienced a steady decline from the early 1950s through the early 1960s but had stabilized by the mid-1960s and increased to near early 1950s levels by the late 1960s (Remsen 1978). However, due to the smaller population in California, there has been little research on threats and causes for decline (Bildstein and Meyer 2000). In addition to direct loss of habitat, sharp-shinned hawks probably are vulnerable to several effects related to urbanization and agriculture. Sharp-shinned hawks are affected by exposure to pesticides, and populations probably declined due to these effects (Henny 1987; Reynolds 1989). Use of pesticides may reduce their prey or cause secondary poisoning. Other identified causes of injury and mortality include collisions with cars and collisions with windows near bird feeders.

Survey Results

Sharp-shinned hawks have been observed several times during the course of the spring/summer avian surveys conducted along the Santa Clara River corridor. Two adults were observed on separate occasions in 1995 and again in 1997 and 1999 (Guthrie 1995B; Guthrie 1997A; Guthrie 1999B). One individual was observed in March 2007 by Bloom Biological, Inc. (2007A), and individuals were observed hunting along agriculture fields along the Santa Clara River during the winter of 2007 to 2008 by Bloom Biological, Inc. (2008). Based on these regular observations, the sharp-shinned hawk is considered to be a regular migrant, and possibly a winter visitor, in the Project area. The Project area is not considered to provide nesting habitat for the species. No sharp-shinned hawk nests or territories have been observed or have ever been known to occur in the Project area or in the region. For this reason, this analysis is limited to impacts to suitable foraging habitat that is used by migrant, and possibly wintering, sharp-shinned hawks.

Suitable foraging habitat in the Project area includes agriculture, disturbed land, grasslands (California annual grassland, purple needlegrass), scrubs (coastal scrub alliances and associations, *Eriodictyon* scrub), chaparrals (undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral), woodlands (California walnut woodland, coast live oak woodland, mixed oak woodland, valley oak woodland), valley oak/grass, riparian habitats (alluvial scrub, big sagebrush scrub, arrow weed scrub, southern coast live oak riparian forest, southern cottonwood–willow riparian, southern willow scrub, Mexican elderberry, mulefat scrub, and river wash), bulrush–cattail wetland, and herbaceous wetland. A total of 14,254 acres of suitable foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 382 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.7% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats). A total of 201 acres would be temporarily impacted.

The sharp-shinned hawk is still a wide-ranging species, is only expected to occur on site as a winter visitor or migrant, and forages in a wide variety of habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time. Therefore, the permanent loss of 382 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 5,195 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 36.4% of these habitats on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

The sharp-shinned hawk is still a wide-ranging species and only occurs on site as a migrant or winter visitor. In addition, approximately 6,570 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area. For these reasons, this permanent loss of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this

species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 5,578 acres (39.1%).

Because the sharp-shinned hawk is still a wide-ranging species and only occurs on site as a migrant or winter visitor, this combined direct and indirect permanent loss of habitat would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species. Foraging birds may avoid active construction areas, thus altering their foraging behavior on site. Vegetation clearing and grading would not result in destruction of young or eggs of this species because it does not nest on site. Implementation of the SCP would not directly impact this species. Because only foraging behavior in construction areas would be affected and because there would be substantial alternative foraging habitat available, RMDP-related construction/grading activities would not have a substantial direct adverse effect on this species; interfere with the movement of the species between important habitat areas or impede the use of native wildlife nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals. Wintering and migrating adults are highly mobile and would not be directly affected by construction activities. Only foraging activities in construction areas would be affected, and substantial alternative foraging habitat would be available. Therefore, indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would be short term and potential secondary effects, such as fugitive dust, ground vibration, noise, nighttime illumination, and increased human activity, would affect a small proportion of sharp-shinned hawks migrating through the Project area.

Similarly, potential long-term development-related secondary effects resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, such as nighttime illumination; noise; increased human activity; predation by pet, stray, and feral cats and dogs and other mesopredators; and pesticides would affect very few individuals migrating through of wintering in the Project area. Furthermore, there would be adequate foraging habitat for migrant and wintering individuals well away from development edges; approximately 6,570 acres of suitable foraging habitat would be protected in the River Corridor SMA, High Country SMA, and Salt Creek area.

These potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; cause the species to drop below self-sustaining levels on site or rangewide; interfere with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the sharp-shinned hawk (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 342 acres (2.4%) of permanent loss and 249 acres of temporary loss;
- Alternative 4 – 328 acres (2.3%) of permanent loss and 246 acres of temporary loss;
- Alternative 5 – 396 acres (2.8%) of permanent loss and 242 acres of temporary loss;
- Alternative 6 – 375 acres (2.6%) of permanent loss and 248 acres of temporary loss; and
- Alternative 7 – 175 acres (1.2%) of permanent loss and 571 acres of temporary loss.

Compared to Alternative 2, which would result in 382 acres (2.7%) of permanent habitat loss and 201 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat reduced, would not be substantially different under Alternatives 5 and 6, and would be substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat increased, and would be substantially increased under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in substantially fewer permanent impacts and substantially greater temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts from Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the sharp-shinned hawk (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 4,983 acres (34.6%) of permanent loss;
- Alternative 4 – 4,734 acres (33.2%) of permanent loss;
- Alternative 5 – 4,628 acres (32.5%) of permanent loss;
- Alternative 6 – 4,125 acres (28.9%) of permanent loss; and
- Alternative 7 – 3,493 acres (24.5%) of permanent loss.

Compared to Alternative 2, which would result in 5,195 acres (36.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would have fewer impacts than Alternative 3 because VCC would not be constructed under these alternatives, and there would be successive reductions under Alternatives 4 through 7 due to other reductions in the Project footprints. In addition, more than 6,570 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the sharp-shinned hawk:

- Alternative 3 – 5,281 acres (37.0%) of permanent loss;
- Alternative 4 – 5,062 acres (35.5%) of permanent loss;
- Alternative 5 – 5,204 acres (35.2%) of permanent loss;
- Alternative 6 – 4,499 acres (31.6%) of permanent loss; and
- Alternative 7 – 3,668 acres (25.7%) of permanent loss.

Compared to Alternative 2, which would result in 5,578 acres (39.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, with Alternatives 4 through 7 having fewer impacts compared to Alternative 3 because VCC would not be constructed under these alternatives. Also, there would be successive reductions in impacts under Alternatives 4 through 7 due to other reductions in the Project footprints. In addition, more than 6,570 acres of foraging habitat would remain in the River Corridor SMA, High Country SMA, and Salt Creek area. Because the combined direct and indirect permanent loss of suitable habitat occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to sharp-shinned hawk individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada

planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Because adult sharp-shinned hawks are highly mobile and the species does not nest on site, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3), and Entrada planning areas would not result in injury or mortality of individuals. Foraging sharp-shinned hawks, however, would probably avoid active construction areas, but substantial alternative foraging habitat would be available. Therefore, impacts to individuals would be adverse but not significant under Alternatives 3 through 7.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than during implementation of the RMDP and the SCP because of the much larger area of impact associated with build-out of the Specific Plan, VCC, and Entrada planning areas.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity and increased predation, as described above for Alternative 2.

Because the sharp-shinned hawk is a migrant and possibly a winter visitor, and because there would be adequate suitable habitat well away from development edges, these potential short-term and long-term secondary effects would not have a substantial adverse effect on the species or contribute to the reduction of its range and distribution. These secondary impacts would be adverse but not significant.

Mitigation Strategy and Summary

No mitigation is required for impacts to the sharp-shinned hawk because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of the River Corridor SMA, High Country SMA and Salt Creek area—areas that will form a large, contiguous open space system containing approximately 6,575 acres of foraging habitat for this species. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, fugitive dust, and increased human activity

during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction, and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; dust; and pesticides will also be mitigated through a variety of measures.

TURKEY VULTURE (CDFG TRUST RESOURCE)

Life History

The turkey vulture (*Cathartes aura*) is widespread throughout North and South America. It is found in most parts of the United States with the exception of the Great Plains and high elevations in the Sierra Nevada mountains. In the east, it breeds from Illinois northeast toward Maine and in portions of southern Quebec; in the west, it breeds from Texas to British Colombia and in portions of Minnesota, North and South Dakota, Colorado, and Kansas (Kirk and Mossman 1998). In California, it is common during the breeding season, and is a year-long resident west of the Sierra Nevada Mountains, especially in coastal areas. Summer and year-long ranges also include the southeastern United States; portions of Texas, Mexico and Central America, and South America; and some islands in the Caribbean (Kirk and Mossman 1998).

Turkey vultures use a variety of habitats while foraging on both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in areas of hilly pastured rangeland, nonintensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner *et al.* 1990A). However, the species prefers hilly areas that provide deflective updrafts for flight and generally avoids extensive areas of row-crop farmland (Kirk and Mossman 1998).

In addition to general habitat loss, turkey vultures are vulnerable to several threats directly related to human activities. As scavengers, turkey vultures can suffer lead poisoning from ingestion of lead bullet fragments in carrion (Kirk and Mossman 1998), and they are especially sensitive to lead poisoning during late fall and winter months, when lead poisoning is most likely to occur from hunted game animals (Kirk and Mossman 1998). They may also be affected by other contaminants, such as mercury when fish are eaten (Kirk and Mossman 1998), or from primary and secondary poisoning as a result of insecticide use (Kirk and Mossman 1998). After 1946, the use of DDT thinned eggshells and may have affected the species enough to compromise populations regionally (Kirk and Mossman 1998). Turkey vultures sometimes feed on roadkill, and vehicle collisions are fairly common (Kirk and Mossman 1998). Collisions with aircraft also pose a serious threat to turkey vultures due to their size, widespread geographic distribution, and occurrence at the same altitudes as many aircraft (Kirk and Mossman 1998). Because of the turkey vulture's large size, entanglement with powerlines and electrocution is also a potential cause of accidental injury or mortality.

Survey Results

No focused surveys have been conducted for the turkey vulture. However, this species has been incidentally observed on site over multiple years during bird surveys conducted from 1988

through 2007 along the Santa Clara River within the riparian and upland habitat. There are no mapped locations for any of these observations from 1988 through 2007.

Bloom Biological, Inc. (2007A) surveyed for raptor nests during February through June in 2007, including turkey vulture nests, and no turkey vulture nests were observed.

Foraging habitat for this species is very broad and includes all shrublands (alluvial scrub, arrow weed scrub, big sagebrush scrub, coastal scrub alliances and associations, and *Eriodictyon* scrub), grasslands (California annual grassland, purple needlegrass, valley oak/grass), agriculture, and disturbed land. A total of 10,027 acres of suitable foraging habitat is present in the Project area.

Nesting habitat is more specific than foraging habitat, and this species would only nest in areas that contain microhabitats of rocky outcrops, boulders, crevices, and possibly standing or fallen snags, the latter of which would be found in the more upland woodland habitats on site (coast live oak woodland, mixed oak woodland, valley oak woodland, and valley oak/grass). A total of 1,468 acres of suitable nesting habitat is present in the Project area; however, the microhabitats that this species could utilize for nesting on site within this larger area have not been quantified. If such sites exist on site, they probably are present in the upper portions of the High Country SMA and Salt Creek area where no development would occur.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 9.3 acres of suitable nesting habitat would be permanently lost through implementation of the RMDP and the SCP, representing 0.6% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 1.4 acres of suitable nesting habitat would be temporarily impacted. A total of 269 acres of suitable foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.7% of these habitats

on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat). A total of 104 acres of suitable foraging habitat would be temporarily impacted.

Turkey vultures have never been observed nesting within or immediately adjacent to the Santa Clara River corridor and are not expected to nest within the corridor (inclusive of the RMDP site). The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging and potential nesting habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time. Therefore, the permanent loss of 9.3 acres of nesting habitat and 269 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging and nesting habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not cause a substantial adverse effect on this species either directly or *via* habitat modifications; interfere with its movement on site; or substantially reduce the number of this species or cause the species to drop below self-sustaining levels (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 85 acres of suitable nesting habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 5.8% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 4,644 acres of suitable foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 46.3% of these habitats on site (**Figure 4.5-125**, Alternative 2 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat).

This species has the potential to nest in some of the rocky outcrops, crevices, or snags within woodlands or canyons on the Project site. However, these microhabitats do not occur extensively across the Project site and have to been quantified. Because much of the suitable nest microhabitat, particularly rocky outcrops, cliff faces, and ledges, occur within the High Country SMA and Salt Creek area, which will not be developed, it is unlikely that a substantial amount of suitable nesting habitat would be impacted. With regard to the loss of foraging habitat for the turkey vulture, this species is an opportunistic carrion scavenger and forages in suitable habitat throughout its broad range. The loss of 46.3% of its foraging habitat in the Project area with build-out of the Specific Plan, VCC, and Entrada planning areas, while adverse, would not have a substantial adverse effect on this species either directly or *via* habitat modifications; interfere with

the movement of this species on site; or substantially reduce the number of this species or cause the species to drop below self-sustaining levels (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable nesting habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 95 acres (6.5%). The combined direct and indirect loss of suitable foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 4,913 acres (49.0%). Because of the limited potential for the turkey vulture to nest in the Project area and because of its use of a broad variety of foraging habitat (*i.e.*, wherever carrion is available), the loss of 49.0% of foraging habitat, while adverse, would not substantially affect this wide-ranging species, the build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species either directly or *via* habitat modifications; interfere with the movement of this species on site; or substantially reduce the number of this species or cause the species to drop below self-sustaining levels (significance criteria 1, 4, and 7). Combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The RMDP primarily impacts the River corridor and associated drainages, which are unlikely to support turkey vulture nests. Because turkey vultures generally prefer more open habitat, especially in hilly areas where they can take advantage of deflective updrafts, the relatively flat and dense riparian woodlands associated with the RMDP are not considered high-quality nesting habitat. In addition, over the course of almost 20 years of avian surveys conducted along the Santa Clara River, no turkey vultures have ever been observed nesting within the RMDP site. Consequently, this species is not expected to nest within the RMDP site.

As these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in direct injury or mortality of adult birds, although there is some risk of collision with fast-moving construction equipment or vehicles if individuals attempt to scavenge carrion in construction areas. If nesting occurred, construction and/or grading activities associated with the proposed RMDP could result in destruction of young or eggs in active nests of this species if such activities occurred during the nesting season, or nests could be abandoned if nesting adults are disturbed. Implementation of the SCP would not directly impact this species. If nests were disturbed, implementation of the

RMDP would have a substantial direct adverse effect on this species; interfere substantially with the movement of the species between important habitat areas or impede the use of native nursery sites (nests); have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Similar to the direct permanent and temporary impacts resulting from the implementation of the RMDP, build-out of the Specific Plan, VCC, and Entrada planning areas is unlikely to result in injury or mortality of individual adult birds, although there is some risk of collision with fast-moving construction equipment or vehicles if individuals attempt to scavenge carrion in construction areas. While there have been no recorded observations of turkey vultures nesting within the build-out area, suitable nesting habitat does occur and construction/grading activities could result in destruction of nests, eggs, or young, or nests could be abandoned if nesting adults are disturbed, if such activities occurred in areas where turkey vultures are nesting (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term, construction-related impacts associated with RMDP and SCP implementation and build-out of the Specific Plan, VCC, and Entrada planning areas could affect this species' foraging and roosting activities in areas adjacent to construction zones. These impacts include construction-related noise, lighting, and disturbance from human activity that could cause nest abandonment or affect foraging behavior.

While short-term secondary impacts associated with the implementation of the RMDP and the SCP would not cause a substantial adverse effect because turkey vultures have never been observed nesting within or immediately adjacent to the Santa Clara River corridor, and are not expected to nest within the corridor, build-out of the Specific Plan, VCC, and Entrada planning areas would occur over a much larger area and would have greater potential to affect this species during construction.

Build-out of the Specific Plan, VCC, and Entrada planning areas also would result in urbanization of lands adjacent to suitable turkey vulture nesting and foraging habitat within the Project area. Urban development could result in long-term secondary impacts such as harassment from humans and pets, secondary poisoning from use of pesticides, lead poisoning

from ingestion of carrion shot with lead ammunition, entanglement with powerlines and electrocution, and increased incidence of vehicle collisions. Because turkey vultures generally avoid nesting in urbanized areas, the development of residential and commercial areas would decrease or restrict the suitable nesting areas on site or birds may abandon nests. This species feeds on carcasses, including roadkill, and the build-out of roads may increase the frequency of vehicle collisions for this species. The use of pesticides in landscaped areas, parks, or common areas may result in secondary poisoning and/or reduce prey for this species.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels (significance criteria 4 and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and foraging habitat for the turkey vulture (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat, and **Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3
  - 9.5 acres (0.6%) of permanent loss and 1.4 acres of temporary loss of nesting habitat
  - 248 acres (2.5%) of permanent loss and 147 acres of temporary loss of foraging habitat;
- Alternative 4
  - 8.9 acres (0.6%) of permanent loss and 1.4 acres of temporary loss of nesting habitat
  - 230 acres (2.3%) of permanent loss and 153 acres of temporary loss of foraging habitat;
- Alternative 5
  - 13 acres (0.9%) of permanent loss and 1.4 acres of temporary loss of nesting habitat

  - 290 acres (2.9%) of permanent loss and 134 acres of temporary loss of foraging habitat;
- Alternative 6
  - 18 acres (11.3%) of permanent loss and 1.3 acres of temporary loss of nesting habitat
  - 284 acres (2.8%) of permanent loss and 150 acres of temporary loss of foraging habitat; and
- Alternative 7
  - 5.6 acres (0.4%) of permanent loss and 13 acres of temporary loss of nesting habitat
  - 135 acres (1.4%) of permanent loss and 4478 acres of temporary loss of foraging habitat.

For nesting habitat, Alternatives 3 and 4 would have similar permanent and temporary impacts compared to Alternative 2, which would result in 9.3 acres (0.6%) of permanent loss of nesting habitat and 1.4 acres of temporary impacts. Alternatives 5 and 6 would have greater permanent impacts and similar temporary impacts. Alternative 7 would have fewer permanent impacts but somewhat greater temporary impacts. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

For foraging habitat, Alternatives 3 and 4 would result in fewer permanent impacts and greater temporary impacts compared to Alternative 2, which would result in 269 acres (2.7%) of permanent loss of foraging habitat and 104 acres of temporary impacts. Alternatives 5 and 6 would have greater permanent and temporary impacts to foraging habitat. Alternative 7 would have substantially fewer permanent impacts to foraging habitat, but substantially greater temporary impacts. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts and relatively more temporary impacts.

Because the overall permanent loss of nesting and foraging habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be similar in magnitude compared to Alternative 2, and the greater total impact under Alternative 7 is mainly due to temporary impacts, impacts to nesting and foraging habitat for the turkey vulture would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the turkey vulture (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat, and **Figures 4.5-126** through **4.5-130**, Alternatives 3 through 7 Impacts to Scrub, California Annual Grassland, Oak/Grass, Agriculture, and River Wash Wildlife Habitat):

- Alternative 3 – 66 acres (4.5%) of permanent loss of nesting habitat and 4,419 acres (44.1%) of permanent loss of foraging habitat;
- Alternative 4 – 65 acres (4.4%) of permanent loss of nesting habitat and 4,243 acres (42.4%) of permanent loss of foraging habitat;
- Alternative 5 – 66 acres (4.5%) of permanent loss of nesting habitat and 4,140 acres (41.3%) of permanent loss of foraging habitat;
- Alternative 6 – 41 acres (2.8%) of permanent loss of nesting habitat and 3,673 acres (36.6%) of permanent loss of foraging habitat; and
- Alternative 7 – 44 acres (3.0%) of permanent loss of nesting habitat and 3,123 acres (31.1%) of permanent loss of foraging habitat.

For nesting habitat, Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, which would result in 85 acres (5.8%) of permanent loss of nesting habitat. Because impacts to nesting habitat for the turkey vulture would be less under Alternatives 3 through 7 compared to Alternative 2, this impact would be adverse but not significant.

Alternatives 3 through 7 would also result in fewer permanent impacts to foraging habitat compared to Alternative 2, which would result in 4,644 acres (46.3%) of permanent loss of foraging habitat. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed, and these alternatives would have successively fewer impacts due to reductions in the Project footprint. The substantial difference between Alternative 7 and the other alternatives is primarily due to the pullback of the Project footprint from the Santa Clara River and its tributaries, which would result in substantially fewer permanent impacts. Although Alternatives 3 through 7 would result in the permanent loss of 31.1% to 44.1% of foraging habitat on site for the turkey vulture, for the reasons cited above for Alternative 2, this impact would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the turkey vulture:

- Alternative 3 – 76 acres (5.2%) of permanent loss of nesting habitat and 4,667 acres (46.5%) of permanent loss of foraging habitat;
- Alternative 4 – 74 acres (5.0%) of permanent loss of nesting habitat and 4,473 acres (44.6%) of permanent loss of foraging habitat;
- Alternative 5 – 79 acres (5.4%) of permanent loss of nesting habitat and 4,430 acres (44.2%) of permanent loss of foraging habitat;
- Alternative 6 – 59 acres (4.0%) of permanent loss of nesting habitat and 3,957 acres (39.5%) of permanent loss of foraging habitat; and
- Alternative 7 – 50 acres (3.4%) of permanent loss of nesting habitat and 3,257 acres (32.5%) of permanent loss of foraging habitat.

For nesting habitat, compared to Alternative 2, which would result in 95 acres (6.5%) of combined direct and indirect permanent loss, Alternatives 3 through 7 would have reduced impacts. Alternatives 3, 4, and 5 would have similar impacts, and Alternatives 6 and 7 would have further reduced impacts. Because Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, impacts to nesting habitat for the turkey vulture would be adverse but not significant under these alternatives.

For foraging habitat, compared to Alternative 2, which would result in 4,913 acres (49.0%) of combined direct and indirect permanent loss, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed, there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7. For the same reasons as cited above for Alternative 2, the combined direct and indirect permanent loss of 32.5% to 46.5% of foraging habitat on site for the turkey vulture would be adverse but not significant.

Impacts to Individuals

The potential for impacts to turkey vulture individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. There is some potential for collisions with fast-moving construction equipment or vehicles if turkey vultures attempt to scavenge carrion in construction areas, but this impact is considered unlikely to occur. While there have been no recorded observations of turkey vultures nesting within the build-out area, suitable nesting habitat does occur and construction/grading activities could result in destruction of nests, eggs, or young or abandonment of nests if such activities occurred in areas where turkey vultures are nesting. Such impacts to nesting turkey vulture individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative would have similar construction activities and long-term effects.

Short-term effects include construction-related noise, lighting, and disturbance from human activity that could cause nest abandonment and disrupt foraging behavior. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than implementation of the RMDP and the SCP because of the much larger area of impact.

Urban development could result in long-term secondary impacts, such as harassment from humans and pets, secondary poisoning from use of pesticides, ingestion of lead from scavenged animal carcasses, entanglement with powerlines and electrocution, and increased incidence of vehicle collisions, as described above for Alternative 2.

These short-term and long-term secondary impacts therefore may interfere with the movement of this species on site, impede the use of nursery sites, or substantially reduce the number of this species or cause the species to drop below self-sustaining levels. Secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to turkey vulture: (1) direct and indirect impacts to individuals; and (2) secondary impacts to individuals.

Although nesting by turkey vultures has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, suitable nesting habitat (oak woodlands and oak/grass) is present on site and it is assumed for the purpose of this analysis that nesting could occur. Impacts to individuals could occur if active nests were disturbed during construction, including destruction of nests and loss of eggs and/or fledglings, or abandonment of nests as a result of human activity and noise. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 500 feet of any active nest until young have fledged. It is also possible that individuals could be injured or killed by fast-moving equipment or vehicles if they attempted to scavenge carrion in construction areas, but this impact is considered to be unlikely or rare, and therefore would be adverse but not significant.

With regard to secondary effects, any nesting activities by the turkey vulture could be adversely affected in the short term by increased human activity and noise if construction occurred during the nesting season. Nighttime lighting may cause adults to abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 500 feet and by retaining a qualified biologist during all grading and construction activities. Long-term development-related impacts include an increased potential for entanglement with power lines poles, resulting in physical injury or death from electrocution. Reproductive success also could be affected by increased noise; lighting; pesticides, which may cause secondary poisoning and loss of prey; lead poisoning due to ingestion of carrion that had been shot; human disturbances of nest sites; and pet, stray, and feral cats and dogs. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of nesting and/or foraging habitat in the High Country SMA and Salt Creek area will provide turkey vultures with relatively undisturbed habitat for foraging and potentially nesting, especially in the remote portions of the High Country SMA. Lighting restrictions along the perimeter of natural areas will help reduce impacts to potential nest sites. Limited recreational usage and access restrictions within the High Country SMA, control of pet, stray, and feral cats and dogs in or near open space areas, trail signage, and homeowner education regarding special-status resources in preserved natural habitat areas will help protect turkey vultures during foraging activities and at potential nest sites. Controls on pesticides (including rodenticides) will prevent accidental poisoning and potential loss of prey. Installation of new or relocation of existing power lines in the High Country SMA and Salt Creek area will be coordinated with CDFG and structures will be designed in accordance with Avian Power Line Interaction Committee (APLIC 2006) guidelines and operated with anti-perching devices to help reduce turkey vulture collisions and electrocutions.

The specific mitigation measures for the turkey vulture are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-124 IMPACTS TO INDIVIDUALS – TURKEY VULTURE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of turkey vulture individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to turkey vulture individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to turkey vulture individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-125 SECONDARY IMPACTS – TURKEY VULTURE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the turkey vulture associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as human activity and pets, increased incidence of vehicle collisions, inadvertent impacts to habitat during construction, and nighttime lighting. These mitigation measures include measures that will preserve, restore and enhance, and manage suitable nesting and foraging habitat in the High Country SMA that will provide a large open space area away from development for the turkey vulture.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce the effects of increased human activity, pets, and increased incidence of vehicle collisions in the Project area (**Figure 4.5-3**). The High Country SMA will protect at least 2,189 acres of suitable foraging habitat and 867 acres of suitable nesting habitat for the turkey vulture.

SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area. Replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Several mitigation measures will control human activities in the High Country SMA. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA. The prohibition of hunting will help protect turkey vultures from lead poisoning due to ingesting contaminated carrion.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within the High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to biological resources outside the grading area in the High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to the turkey vulture, including short-term construction-related noise and increased human activity, as well as long-term increased human activity; greater vulnerability to harassment by pet, stray, and feral cats and dogs; entanglement with power lines and electrocution; and secondary poisoning and loss of prey from use of pesticides.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise by identifying nest sites and providing for buffers between nests and construction activities.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes at least 1,068 acres of foraging habitat and 380 nesting habitat for the turkey vulture.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated. Along with BIO-29, this measure will help offset the effects of increased human activity in the area by providing high quality habitat for prey such as mule deer, as well as a variety of smaller prey.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-63 and BIO-69 will also be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-81 and BIO-82 will be implemented to mitigate for the impacts from powerlines as a result of the build-out of the Specific Plan, VCC, and Entrada planning areas.

BIO-81 requires the installation/relocation of utility poles in the High Country SMA and Salt Creek area to be coordinated with CDFG.

BIO-82 specifies anti-perching devices to deter turkey vultures and other raptors from perching on all surfaces of new utility towers. Towers shall be kept clean of debris, such as cable, trash, and construction materials.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the turkey vulture would be adverse but not significant for Alternatives 2, 3, 4, 5 6, and 7.

BLACK-CROWNED NIGHT-HERON (ROOKERY) (CALIFORNIA SPECIAL ANIMAL)

Life History

The black-crowned night-heron (*Nycticorax nycticorax*) is a widespread species, breeding on every continent except Australia and Antarctica (County of Riverside 2008). It breeds in the western hemisphere from British Columbia eastward to Nova Scotia, southward locally through the Americas to southern South America, and winters locally from Washington to New England southward throughout the remainder of the breeding range (AOU 1998). Its distribution generally is determined by the suitable wetland habitat for feeding. In California, the black-crowned night-heron is a fairly common, year-round resident in lowlands and foothills throughout most of the state, including the Salton Sea and Colorado River areas, and very common locally in large nesting colonies (Zeiner *et al.* 1990A). In southern California, the species generally occurs locally throughout the region as a year-round resident, except for in mountainous and desert areas (Garrett and Dunn 1981). Rookeries (nesting colonies) for this species are scarce within southern California. This species is a local migrant, dispersing widely from breeding colonies after nesting (County of Riverside 2008). Much of the breeding population from northwestern and northeastern California probably moves southward and is absent from those areas in midwinter.

The black-crowned night-heron's habitat requirements are varied, including all types of wetland areas, including fresh, brackish, and salt water ecosystems and even using man-made ditches, canals, reservoirs, and wet agricultural fields (County of Riverside 2008). It is restricted to more aquatic wetlands such as marshes, ponds, reservoirs, and estuaries for foraging and also occurs along the margins of lacustrine, large riverine, and fresh and saline emergent habitats (Garrett and Dunn 1981; County of Riverside 2008). Nests and roosts are associated with dense-foliaged trees and dense emergent wetlands (Zeiner *et al.* 1990A). During spring and fall migration, the black-crowned night-heron uses wetlands associated with the coasts and river drainages (County of Riverside 2008). Winter habitat includes freshwater marshes and swamps in tropical areas (County of Riverside 2008).

The black-crowned night-heron feeds on annelid worms, insects, crustaceans, amphibians, and fish, with fish being the dominant food source (County of Riverside 2008). The species prefers shallow, weedy pond margins, creeks, and marshes for foraging habitat and feeds mainly from evening to early morning, but feeds during the day during the breeding season (Williams 1979; County of Riverside 2008). The black-crowned night-heron breeds from February to July throughout most of California, but April to August in northeastern California (Cogswell 1977). It uses more forested riparian areas for nesting (Garrett and Dunn 1988) and nests are located in dense-foliaged trees; dense, fresh, or brackish emergent wetlands; or dense shrubbery or vine tangles, usually near aquatic or emergent feeding areas. Nests are built of twigs and/or marsh

plants (Zeiner *et al.* 1990A). The species is nocturnally active and disperses widely from breeding colonies after nesting (County of Riverside 2008). Custer and Osborn (1978) found that, in North Carolina, black-crowned night-herons foraged up to five miles from their nesting area. Black-crowned night-heron pairs defend both feeding and nesting territories and may chase other species from foraging areas or crows near nesting areas (Noble *et al.* 1938; Teal 1965). Many year-old black-crowned night-herons return to the vicinity of their natal colony, but others may end up thousands of miles from their natal area. Juvenile birds disperse widely in all directions after nesting but make relatively restricted movements thereafter (County of Riverside 2008; Erwin *et al.* 1996).

Development- and human-related threats to black-crowned night-heron include disturbance at breeding colonies, drainage of wetlands, and land development (Gross 1923; County of Riverside 2008). Human disturbance of nesting colonies may result in nest abandonment, predation of eggs, and reduced late-season nesting (County of Riverside 2008). Nest predators include crows and ravens, both of which are attracted to construction areas, urban development, and agriculture. Environmental contaminants and disease may also affect this species, as evidenced by recent, massive die-offs of water-associated species at the Salton Sea (County of Riverside 2008). DDT and other pesticides are thought to have caused local reproductive failure and population declines, but convincing documentation is lacking and sparse census data from the early 20th century makes trend analysis difficult (County of Riverside 2008). As with other wetland and riparian species, black-crowned night-herons may be sensitive to several other human- or development-related impacts. Construction-related dust, noise and ground vibration, nighttime lighting, diminished water quality, and altered hydrology are all factors that could affect black-crowned night-herons in the short term. Noise; lighting; diminished water quality and altered hydrology (*e.g.*, groundwater pumping and dewatering); pesticides that could reduce prey or cause secondary poisoning; and predation by pet, stray, and feral cats and dogs and other mesopredators are all factors that could adversely affect black-crowned night-heron over the long term.

Survey Results

Surveys for riparian species have been conducted for multiple years along the Santa Clara River in suitable habitat for the black-crowned night-heron. These surveys were conducted by Guthrie from 1988 through 2007 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger and Greaves in 1994, 1996, 1997 and 1998 (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek

in 2006 (Dudek and Associates 2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom in 2007 and 2008 (Bloom Biological 2007A, 2008).

The black-crowned night-heron has been regularly observed over multiple years during bird surveys conducted from 1988 through 2007 along the Santa Clara River within the riparian scrub and woodland habitat in the RMDP Project area (Guthrie 1993A, 1993B, 1994B, 1995B, 1996B, 1998A, 1999C, 2000C, 2001B, 2002A, 2003B, 2004H, 2005B, 2006A; Labinger *et al.* 1995, 1996; Bloom Biological 2007A, 2008), in the VCC planning area (Guthrie 1988, 1992, 1994A, 1995A, 1996A, 1997A, 1998B, 1999A, 2000E), off site in the Castaic Junction area (Guthrie 1988, 1989, 1993A, 1994A, 1995A, 1997A, 1998A, 1999A, 2000C, 2001A, 2003A, 2004I, 2005A, 2006C), and in the San Francisquito Creek area (Guthrie 2006A, 2006C).

Individuals have been observed early in the year and are thought to be wintering individuals or migrants. Although the riparian bird surveys were not focused on the black-crowned night-heron, roosts or rookeries would have been readily detected if present. None have been detected during the surveys within or adjacent to the Project area.

Although no roosts or rookeries for the black-crowned night-heron have been documented during the many surveys on site, the Project area supports suitable foraging and potentially supports nesting habitat for the species, and, thus, this EIS/EIR analyzes the impact of the Project on this habitat. Potential nesting and foraging habitat for this species on site includes bulrush–cattail wetland, coastal and valley freshwater marsh, and mulefat scrub. In addition, southern coast live oak riparian forest, southern cottonwood–willow riparian, and southern willow scrub are potential nesting habitats for this species. Because potential nesting habitat is inclusive of all suitable foraging habitat, this analysis refers to nesting and foraging habitat. A total of 520 acres of potential nesting habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 56 acres of potential nesting habitat, which also includes all suitable foraging habitat, would be permanently lost through implementation of the RMDP and the SCP, representing 10.7% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat). A total of 53 acres would be temporarily impacted.

The black-crowned night-heron is very widespread and a relatively low-status species in California, and no roosts or rookeries have been documented in the Project area. Its potential to nest on site is considered to be low. Loss of habitat, however, could alter foraging behavior by winter visitors and migrants. However, because this species is widespread and its sensitivity status is related to nesting areas (rookeries), loss of foraging habitat would not be a substantial adverse effect on this species. Furthermore, the construction of RMDP facilities would be phased over a long period of time and hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. Therefore, the permanent loss of 56 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 15 acres of potential nesting habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 2.8% of these habitats on site (**Figure 4.5-54**, Alternative 2 Impacts to Riparian/Wetland Wildlife Habitat).

The black-crowned night-heron is very widespread and a relatively low-status species in California, and its potential to nest on site is considered to be low. Loss of habitat, however, would alter foraging behavior by winter visitors and migrants. However,

because this species is widespread and its sensitivity status is related to nesting areas (rookeries), loss of foraging habitat would not be a substantial adverse effect on this species. Therefore, permanent loss of 2.8% of nesting habitat as a result of construction/grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of potential nesting habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 70 acres (13.5%). Because the black-crowned night-heron is a widespread and a relatively low-status species in California, no roosts or rookeries have been documented on site, and only foraging habitat would be lost, the combined permanent loss of 70 acres of nesting habitat as a result of construction/grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

There are no black-crowned night-heron roosts or rookeries documented on site and this low-status species is highly mobile, so it is unlikely that the proposed Project would result in the mortality of adults, young, and/or eggs due to destruction of nests if construction and/or grading activities occurred during the nesting season of this species. The only anticipated impacts of the Project to individuals would be alteration of foraging behavior by winter visitors and migrants due to construction activities and loss of habitat, as analyzed above. Implementation of the SCP would not directly impact this species. Because of the relatively small permanent loss and temporary impacts to habitat, because no roosts or rookeries are documented on site, and because adults are very mobile, there would be a very low probability of injury or mortality of black-crowned night-herons using this habitat as a result of construction/grading activities. The proposed Project

would not have a substantial direct adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is similar to that described above for direct permanent impacts to individuals, but is relatively less because less potential nesting habitat would be affected. It is highly unlikely that the proposed Project would result in mortality of adults, young, and/or eggs caused by the destruction of nests if construction and/or grading activities occurred during the nesting season of this species. The only anticipated impacts of the Project on individuals would be alteration of foraging behavior by winter visitors and migrants due to construction activities and loss of habitat, as analyzed above. The proposed Project would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

In the short term, noise, dust, and nighttime illumination from the construction-related activities in and around the Santa Clara River corridor could disrupt behavioral activities, including foraging, of wintering individuals and migrants. Nesting activities would not be disrupted because no rookeries have been documented on site and the potential for nesting to occur on site is considered to be very low. Short-term secondary impacts to foraging behavior would not be substantially adverse, however, because the black-crowned night-heron is capable of foraging elsewhere in the River corridor during construction. Similarly, long-term secondary effects on foraging by wintering and migrant individuals, resulting from implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas (*e.g.*, increased human activity and pets) would not be substantially adverse because adequate foraging habitat will be available for this species in the River corridor. In addition, numerous mitigation measures, as described fully in **Subsection 4.5.6**, Mitigation Measures, will be implemented to control for potential impacts related to construction-generated dust, noise, and ground vibration; nighttime lighting; diminished water quality and altered hydrology; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and other mesopredators. For these reasons, potential short-term and long-term secondary impacts as a result of the construction of RMDP

facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to potential nesting habitat for the black-crowned night-heron (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 40 acres (7.6%) of permanent loss and 54 acres of temporary loss;
- Alternative 4 – 41 acres (7.9%) of permanent loss and 50 acres of temporary loss;
- Alternative 5 – 47 acres (9.0%) of permanent loss and 57 acres of temporary loss;
- Alternative 6 – 34 acres (6.6%) of permanent loss and 52 acres of temporary loss; and
- Alternative 7 – 8.6 acres (1.7%) of permanent loss and 35 acres of temporary loss.

Compared to Alternative 2, which would result in 56 acres (10.7%) of permanent habitat loss and 53 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternative 3, marginally to somewhat less under Alternatives 4 and 6, somewhat more under Alternative 5, and substantially less under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under this alternative, which would result in fewer direct permanent and temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to potential nesting habitat for the black-crowned night-heron (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 12 acres (2.2%) of permanent loss;
- Alternative 4 – 8.7 acres (1.7%) of permanent loss;
- Alternative 5 – 5.5 acres (1.1%) of permanent loss;
- Alternative 6 – 2.6 acres (0.5%) of permanent loss; and
- Alternative 7 – 1.3 acres (0.2%) of permanent loss.

Compared to Alternative 2, which would result in 15 acres (2.8%) of permanent loss of potential nesting habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to potential nesting habitat for the black-crowned night-heron:

- Alternative 3 – 51 acres (9.8%) of permanent loss;
- Alternative 4 – 50 acres (9.5%) of permanent loss;
- Alternative 5 – 52 acres (10.0%) of permanent loss;
- Alternative 6 – 37 acres (7.1%) of permanent loss; and
- Alternative 7 – 9.9 acres (1.9%) of permanent loss.

Compared to Alternative 2, which would result in 70 acres (13.5%) of combined direct and indirect permanent loss of nesting habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons described above for the discussions of direct and indirect impacts. Alternatives 6 and 7 would have reduced impacts compared to Alternatives 2, 3, 4 and 5 due to additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternatives 6 and 7 compared to Alternatives 2, 3, 4, and 5. The combined direct and indirect permanent loss of potential nesting habitat for the black-crowned night-heron occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for impacts to individuals of the black-crowned night-heron as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be the same under Alternatives 3 through 7 as compared to Alternative 2. Because rookeries have not been documented on site and because adults are highly mobile, injury or mortality of individuals resulting from construction activities is highly unlikely. The only anticipated impact is alteration of foraging by winter visitors and migrants as a result of construction activities and loss of suitable habitat. Because this species is widespread and does not nest on site, impacts to individuals of the black-crowned night-heron occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be adverse but not significant for Alternatives 3 through 7.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Some wintering and migrant individuals may be displaced from foraging habitat, but this impact would not be substantially adverse because this species is widespread and adequate alternative foraging habitat will be available in the River corridor. In addition, numerous mitigation measures, as described fully in **Subsection 4.5.6**, Mitigation Measures, will be implemented to control for potential impacts related to construction-generated dust, noise, and ground vibration; nighttime lighting; diminished water quality and altered hydrology; pesticides; increased human activity; and predation by pet, stray, and feral cats and dogs and other mesopredators. Short-term and long-term secondary impacts would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the black-crowned night-heron because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 370 acres of suitable riparian habitat in the River Corridor SMA, as well as drainages in the Salt Creek area and High Country SMA that contain riparian habitats. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, lighting, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures.

NUTTALL'S WOODPECKER (NESTING) (CALIFORNIA SPECIAL ANIMAL)

Life History

Nuttall's woodpecker (*Picoides nuttallii*) is a permanent resident in California with a range extending from northern California southward to northwestern Baja California, and generally west of deserts and the Sierra divide. Nuttall's woodpecker occurs from Siskiyou, Shasta, and northwestern Lassen counties; southward into the foothills of eastern Trinity and southeastern Mendocino counties to the Pacific Coast at Sonoma County and south to Los Angeles, Riverside, and San Bernardino counties. In southern California, Nuttall's woodpecker occurs in riparian habitats into deserts and along the eastern mountain slopes in eastern San Diego County (Garrett and Dunn 1981; Small 1994). Isolated populations east of the Sierra Nevada mountains are present along the Owens River in Inyo County. In northwestern Baja California, Nuttall's woodpecker occurs below 1,250 meters (4,101 feet) AMSL, south to La Encantada and Rancho Rosarito (Lowther 2000).

Nuttall's woodpecker primarily occurs in upland oak woodlands, to a lesser extent in riparian woodlands, and rarely occurs in conifer forests. It has been described as a species characteristic of, if not confined to, oak woodlands in California (Lowther 2000). However, its habitat preference shifts from upland oak woodlands to riparian habitat as it ranges southward in its distribution and oaks decrease in abundance (Lowther 2000). In northern California, Nuttall's woodpecker occurs in hills dominated by coast live oak and valley oaks and willow and sycamore in riparian habitats (Jenkins 1979). In Kern County, California, it occurs from 1,100 to 1,700 meters (3,609 to 5,577 feet) AMSL in elevation in blue oak, valley oak, California black oak, interior live oak, and canyon live oak woodlands (Block 1991). In northwestern Baja California, Nuttall's woodpecker occurs in desert riparian areas containing cottonwoods and willows (Zeiner *et al.* 1990A).

Nuttall's woodpecker feeds mostly on adult and larval insects, primarily beetles, which make up as much as 80% of their diet. A smaller portion of its diet is composed of berries, poison-oak seeds, nuts, fruits, and sap (Zeiner *et al.* 1990A). It forages mostly in low elevation oak and riparian deciduous habitats, gleaning prey from trunks, branches, twigs, and foliage (Jenkins 1979), but occasionally attempts aerial capture of insects, as well as feeding on the ground (Zeiner *et al.* 1990A).

Nuttall's woodpecker breeds from late March to early July, with a peak in April to early June (Zeiner *et al.* 1990A). It forms monogamous pairs and appears to use the same territory year round (Lowther 2000). It uses snags and dead limbs in soft wood for nest excavations, with the tree cavity and foliage providing cover. The nesting cavities are 0.6 to 18 meters (2 to 60 feet) above the ground and occur primarily in riparian habitat located in dead and occasionally live trunks or limbs of willow, sycamore, cottonwood, or alder (Zeiner *et al.* 1990A; Miller and Bock 1972).

Although a year-round resident in California, Nuttall's woodpeckers may move upslope out of the foothills and canyons of higher mountain ranges after breeding (Small 1994). Miller and Bock (1972) found the home range for Nuttall's woodpecker to be 0.8 kilometer (0.5 mile) in a riparian strip in Monterey County.

Nuttall's woodpecker populations appear to be stable at this time, and this species is common and somewhat tolerant of human activity (Lowther 2000). Threats to Nuttall's woodpecker include loss of preferred habitat due to flood control, urbanization, and agriculture. Raccoons, which are adapted to urban environments, prey on young and eggs (Zeiner *et al.* 1990A). It is presumed that pet, stray, and feral cats would also prey on Nuttall's woodpecker. Other development- and human-related impacts expected to affect this species include construction-related dust; noise and ground vibration; nighttime lighting; and pesticides, which may reduce prey or cause secondary poisoning. Invasive species in riparian areas such as giant reed and tamarisk also would be expected to adversely affect nesting and foraging habitat for this species, and Argentine ants may prey on nestlings.

Survey Results

Avian surveys have been conducted over multiple years along the Santa Clara River within suitable habitat for the Nuttall's woodpecker, including by Guthrie from 1988 through 2006 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.*, in 1994, 1996, 1997 (1995, 1996, 1997A, 1997B); and by Labinger and Greaves in 1998 (1999A) within Castaic Creek, Salt Creek, High Country SMA; within portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (Bloom Biological 2007A, 2008).

Nuttall's woodpecker has been observed nearly every year along the Santa Clara River since surveys began in 1988. Bloom Biological, Inc. (2007A, 2008), for example, found Nuttall's woodpecker to be common in cottonwood and willow riparian habitat along the Santa Clara River and Castaic Creek, as well as in coast live oak woodland in canyons and adjoining uplands. As a resident species, Nuttall's woodpecker would likely nest in riparian habitat located in dead and occasionally live trunks or limbs of willow, sycamore, cottonwood, or alder (Zeiner *et al.* 1990A; Miller and Bock 1972). Additional observations occur along the Santa Clara River east of Castaic Creek, in the VCC planning area, at South Fork, in the Entrada planning area, and west of Airport Mesa (Bloom Biological 2007A).

Suitable nesting habitat for Nuttall's woodpecker in the Project area includes oak woodlands (coast live oak woodland, mixed oak woodland and forest, and valley oak woodland), valley oak/grass, mulefat scrub, southern coast live oak riparian forest, southern cottonwood–willow riparian, and southern willow scrub. A total of 1,985 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 64 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 3.2% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 54 acres would be temporarily impacted.

The Nuttall's woodpecker is still a common and wide-ranging species, populations seem to be stable, and it uses a variety of riparian and woodland habitats. The construction of RMDP facilities would be phased over a long period of time and more than 1,600 acres of suitable riparian and woodland habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 64 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict

the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 100 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 5.0% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat).

Because Nuttall's woodpecker is still a common and wide-ranging species, populations appear to be stable, and more than 1,600 acres of habitat would be preserved for this species, the loss of 100 acres habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 163 acres (8.2%). For the reasons cited above, the permanent loss of 163 acres habitat from the combined permanent impacts of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The Nuttall's woodpecker is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in injury or

mortality of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. Also, implementation of the RMDP could result in mortality of young and/or eggs due to destruction of nests if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus potentially reducing survivorship and reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The Nuttall's woodpecker is a relatively mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. Also, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus potentially reducing survivorship and reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Indirect, permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. Although construction would be of a short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of nesting and foraging activities, potentially affecting reproductive success.

Potential long-term secondary impacts associated with urban development include noise (similar to the noise effects discussed above for least Bell’s vireo), nighttime illumination, invasive species such as giant reed, tamarisk, and Argentine ants, pesticide use resulting in loss of prey and/or secondary poisoning, increased human activity, harassment and predation by pet, stray, and feral cats and dogs, and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term.

RMDP facilities include a public trail and viewing platforms adjacent to and along the northern edge of the Santa Clara River corridor, as shown in **Figure 4.5-88**, Special-Status Riparian Bird Observations in Relation to Viewing Platforms. The trail and viewing platforms will be used by

the public during daytime hours. There is a potential for secondary impacts to Nuttall's woodpecker nesting in areas that are adjacent to the trail and viewing platforms. Secondary impacts primarily would include noise and general increases in human activity that could disrupt behavioral activities such as foraging, territory defense, and nesting, or increase physiological stress. In addition, there is the potential for increased trash along the trail that could enter the River Corridor SMA. Due to the very close proximity of viewing platforms and trails to riparian habitats, there is potential for unauthorized trespass by the public into sensitive habitat areas. Although there would be no lighting provided for evening use of the trail and viewing platforms, public access during the nighttime hours may still occur and could introduce fugitive light and noise. These impacts have the potential to affect the health of young, and potentially reduce survivorship and reproductive success.

Because the potential short-term and long-term secondary impacts could occur over a much broader area than the direct and indirect loss of habitat, secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Nuttall's woodpecker (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 48 acres (2.4%) of permanent loss and 55 acres of temporary loss;
- Alternative 4 – 49 acres (2.5%) of permanent loss and 51 acres of temporary loss;
- Alternative 5 – 59 acres (3.0%) of permanent loss and 58 acres of temporary loss;
- Alternative 6 – 52 acres (2.6%) of permanent loss and 53 acres of temporary loss; and
- Alternative 7 – 14 acres (0.7%) of permanent loss and 47 acres of temporary loss.

Compared to Alternative 2, which would result in 64 acres (3.2%) of permanent habitat loss and 54 acres of temporary impacts, the permanent loss of habitat under Alternatives

3 through 6 would be somewhat reduced, and Alternative 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternatives 3, 4, and 6, marginally greater under Alternative 5, and somewhat reduced under Alternative 7. The primary difference for permanent impacts under Alternative 7, compared to the other alternatives, is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be somewhat to substantially reduced compared to Alternative 2, and temporary impacts would not be substantially different to somewhat reduced or marginally greater, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Nuttall's woodpecker (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 78 acres (3.9%) of permanent loss;
- Alternative 4 – 73 acres (3.7%) of permanent loss;
- Alternative 5 – 71 acres (3.6%) of permanent loss;
- Alternative 6 – 43 acres (2.2%) of permanent loss; and
- Alternative 7 – 46 acres (2.3%) of permanent loss.

Compared to Alternative 2, which would result in 100 acres (5.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 3 through 7.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Nuttall's woodpecker:

- Alternative 3 – 126 acres (6.3%) of permanent loss;
- Alternative 4 – 122 acres (6.2%) of permanent loss;
- Alternative 5 – 130 acres (6.6%) of permanent loss;
- Alternative 6 – 95 acres (4.8%) of permanent loss; and
- Alternative 7 – 60 acres (3.0%) of permanent loss.

Compared to Alternative 2, which would result in 163 acres (8.2%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for Nuttall's woodpecker occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to Nuttall's woodpecker individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Although adult birds would likely avoid injury or mortality, loss of young and/or eggs due to destruction of nests could occur, and provisioning of young could be disrupted, potentially reducing survivorship and reproductive success, if construction/grading activities occurred during the nesting season of this species. Indirect, permanent impacts (Impacts to Individuals) under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term secondary impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than with implementation of the RMDP and the SCP

because of the much larger area of impact. If these impacts occur during the nesting season, reproductive success could be affected.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include noise; lighting; invasive species, such as giant reed, tamarisk, and Argentine ants; increased human activity; increased predation; and use of pesticides described above for Alternative 2.

There would be no viewing platforms constructed in the River Corridor SMA under Alternatives 3 through 7.

Because these potential short-term and long-term secondary effects could occur over a much broader area than direct or indirect loss of habitat, they would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to Nuttall's woodpecker: (1) impacts to individuals; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by Nuttall's woodpecker has been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

With regard to secondary effects, nesting and foraging activities by the Nuttall's woodpecker could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may alter foraging and provisioning of young. Construction-generated dust may affect habitat quality and both insect prey and vegetative food sources (*e.g.*, berries and sap) for the Nuttall's woodpecker. Lighting may induce physiological stress and increase the risk of predation by nocturnal predators such as raccoons. These short-term construction-related secondary impacts will be minimized by

conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Several general measures will be implemented to protect wetland habitats that will reduce impacts to Nuttall's woodpecker. These measures include obtaining pertinent state and federal wetland permits and authorizations prior to construction activities, biological monitoring during any stream diversions, restrictions on construction equipment operating in ponds or flowing water, and protection of water quality from mud, silt, and other pollutants. Long-term development-related impacts include invasive species such as giant reed and tamarisk and Argentine ants which may prey on nestlings; increased noise; introduction of secondary effects related to viewing platforms and trails along the River Corridor SMA (under Alternative 2 only); lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; and predation by pet, stray, and feral cats and dogs and other mesopredators. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of approximately 1,629 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide Nuttall's woodpeckers with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Nuttall's woodpeckers by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Controls on Argentine ants will help reduce impacts on young in nests.

The specific mitigation measures for the Nuttall's woodpecker are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-126 IMPACTS TO INDIVIDUALS – NUTTALL'S WOODPECKER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Nuttall's woodpecker individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during

development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Nuttall's woodpecker individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Nuttall's woodpecker individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-127 SECONDARY IMPACTS – NUTTALL'S WOODPECKER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to mitigate for long-term secondary effects on Nuttall's woodpecker associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as abandonment of nests caused by human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for Nuttall's woodpecker that will offset secondary impacts. Mitigation measures to avoid and minimize impacts to riparian/wetland habitats and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 341 acres of suitable habitat for Nuttall's woodpecker. The High Country SMA will preserve and enhance 885 acres of suitable habitat for Nuttall's woodpecker.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters

within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. These mitigation measures will address avoidance and minimization of downstream hydrology and water quality effects that could adversely affect Nuttall's woodpecker habitat and/or breeding populations.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Nuttall's woodpecker, including short-term construction-related dust, noise, and ground vibration; and long-term impacts such as invasive species (including exotic plants and Argentine ants); increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as secondary poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

Three mitigation measures, BIO-47, BIO-49, and BIO-70, will reduce impacts to the Nuttall's woodpecker during construction activities by protecting riparian/wetland habitats.

BIO-47 requires that slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area that will provide refuge for arroyo toad during construction.

BIO-49 prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species

adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to Nuttall's woodpecker by protecting habitat quality and by minimizing impacts on its insect prey and vegetative food resources. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 will improve long-term habitat quality for the Nuttall's woodpecker and include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity, and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail

systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to Nuttall's woodpecker by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the Nuttall's woodpecker would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

CALIFORNIA HORNED LARK (WL)

Life History

Horned larks (*Eremophila alpestris*) have a holarctic distribution, ranging from the Arctic south to central Asia and Mexico. There are numerous regional subspecies representing the superspecies across this holarctic range, including the California horned lark (*Eremophila alpestris* ssp. *actia*). The California horned lark is designated a Watch List species.

Horned larks are common and abundant residents in a variety of open habitats, usually where trees and shrubs are absent and can be found from sea level to elevations of 4,000 meters (13,123 feet) AMSL (Beason 1995). In general, the northernmost populations of horned lark are migratory, moving south during the winter into remaining areas of the breeding range. There are also southward movements into areas south of the breeding range, particularly in the southeastern United States (Beason 1995).

The California horned lark breeds and resides in the coastal region of California from Sonoma County southeast to the United States–Mexico border, including most of the San Joaquin Valley, and eastward to the foothills of the Sierra Nevada (Grinnell and Miller 1944; AOU 1998). It is found in grasslands along the coast and deserts near sea level and alpine dwarf-shrub habitat above the tree line. It is less common in mountain regions, on the north coast, and in coniferous or chaparral habitats (McCaskie *et al.* 1979). California horned larks breed from March through July, with a peak in activity in May and they frequently raise two broods in a season (Zeiner *et al.* 1990A).

Horned lark nests are associated with bare ground such as plowed or fall-planted fields and are often positioned on the north side of grass bunches, rocks, or bushes to provide shade from afternoon sun (Beason and Franks 1974; Hartman and Oring 2003). To a lesser extent, horned larks may nest on marshy soil (Mousley 1916; Verbeek 1967). During the spring and fall migration, horned larks use the same habitats occupied at other times of the year, with an increase in beaches and sand dunes and also mowed areas, such as airfields (Beason 1995). Winter habitat use is similar in structure to that used for breeding and migration with open, short vegetated habitats, beaches, sand dunes, and airfields (Grzybowski 1983; Beason 1995).

Horned larks feed nestlings mostly insects, snails, and spiders during the breeding season but typically consume forb and grass seeds and other plant matter during other seasons (Zeiner *et al.* 1990A). Individuals forage in either bare areas or in agricultural fields with low, short vegetation (Beason 1995). The California horned lark uses predominantly agriculture, grassland, and disturbed areas for foraging, as well as sparse shrub and scrub habitats (Garrett and Dunn 1981). In winter, flocks frequent roadsides, feedlots, and fields where manure from feedlots is spread.

In addition to direct loss of habitat and fragmentation, California horned larks are vulnerable to several effects related to agriculture and urbanization. Increased use of pesticides, specifically Carbofuran and Fenthion, have been shown to poison and kill horned larks (Beason 1995). The demonstrated deleterious effects of these pesticides illustrate that horned larks may be vulnerable to certain chemicals because of their ground-foraging habits and seasonally varying diet. Pesticides may also cause a decline in prey abundance. Mowing of grasslands occupied by nesting horned larks substantially increased nest failures (Kershner and Bollinger 1996). Horned lark nests can also be parasitized by brown-headed cowbirds, especially after the first brood when there are multiple broods in a single season (Beason 1995). Other development- and human-related impacts expected to affect this species include construction-related dust; noise and ground vibration; nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators; and increased predation by pet, stray, and feral cats and dogs. Areas of increased moisture may attract Argentine ants that prey on nestlings.

Survey Results

The Project area provides suitable foraging and nesting habitat for California horned lark throughout the Specific Plan, VCC, and Entrada planning areas. Surveys for avian species have been conducted since 1988 along the Santa Clara River, Castaic Creek, and upland habitats of the Specific Plan, VCC, and Entrada planning areas. This species has been observed on site over multiple years during the annual bird surveys conducted from 1988 through 2008 along the Santa Clara River within riparian and upland habitat. Horned larks have been observed regularly foraging in plowed and graded fields near the Santa Clara River and Castaic Creek within the RMDP and VCC planning areas, and adjacent to the Entrada planning area in Castaic Junction. Most recently in December 2007 and January 2008, Bloom Biological, Inc. (2008) observed large flocks of foraging horned larks numbering from 250 to 500 individuals in the Wolcott agricultural fields and east alfalfa field, as well as smaller groups along the Santa Clara River. Nesting on site by the California horned lark has not been documented. Although focused surveys were not conducted for the California horned lark, the general bird surveys that have been conducted within the Santa Clara River and associated tributaries, including some of the agricultural areas near the River since 1988 would likely have observed and documented any nesting horned larks present on site. Although nesting has not been documented on site, California horned larks are thought to be a resident because of these numerous observations and because suitable foraging and nesting habitat is present throughout the Project site. Agriculture, California annual grassland, disturbed land, and purple needlegrass are suitable habitats for the California horned lark. A total of 5,118 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 212 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 4.1% of these habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat). A total of 94 acres would be temporarily impacted.

The California horned lark is still a wide-ranging species and uses a variety of grassland, agricultural, and disturbed habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 212 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,079 acres of suitable habitat would be permanently loss through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 60.2% of suitable habitats on site (**Figure 4.5-66**, Alternative 2 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat).

A relatively large amount and percentage of suitable habitat for the California horned lark would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 60.2% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,291 acres (64.3%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the California horned lark in the Project area, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because the California horned lark is highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species, but wintering flocks may avoid or leave construction areas. Implementation of the SCP would not directly impact this species. This species has not been observed nesting on site; however, it is considered a breeding resident based on common occurrence on site during general avian surveys. Vegetation clearing or grading activities occurring during the nesting season could result in destruction of nests, eggs, and young; interfere with foraging and provisioning of young; or cause adults to abandon nests. Because of the special status of this bird species and the potential for destruction of nests, eggs, or young, and interference with foraging and provisioning, during construction/grading activities associated with implementation of the RMDP, such impacts would have a substantial direct adverse effect on this species; impede the use of a native wildlife nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals, but over a much larger area. Wintering flocks may be displaced from foraging areas, and clearing or grading activities during the nesting season could result in destruction of nests, eggs, or young; interfere with foraging and provisioning; or cause nest abandonment. Such impacts would have a substantial direct adverse effect on this species; impede the use of a native wildlife nursery site; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term construction-related activities associated with the RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect California horned larks in areas adjacent to construction zones. Short-term secondary impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime lighting. Disturbance associated with human activity during construction could also result in a decrease in nesting success because this species uses open ground for nesting and foraging and is susceptible to harassment by humans. Over the long term, the close proximity of urban development to suitable California horned lark habitat resulting from build-out of the Specific Plan, VCC, and Entrada planning areas, could result in abandonment of nests; greater vulnerability to pesticides that may cause secondary poisoning and reduce its prey abundance; and greater vulnerability to predation by pet, stray, feral cats and dogs, and other mesopredators that could result in decreased nesting success. Nighttime lighting could induce physiological stress and increase predation by nocturnal predators. Argentine ants that are attracted to moist habitats may prey on nestlings. Cowbird nest parasitism also could reduce reproductive success. For these reasons, the potential short-term and long-term secondary impacts would have a substantial adverse effect on this species; would cause the species to drop below self-sustaining levels on site or rangewide; would interfere with the movement of the species between important habitat areas; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for California horned lark (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 197 acres (3.8%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 179 acres (3.5%) of permanent loss and 142 acres of temporary loss;
- Alternative 5 – 234 acres (4.6%) of permanent loss and 118 acres of temporary loss;
- Alternative 6 – 238 acres (4.6%) of permanent loss and 132 acres of temporary loss; and
- Alternative 7 – 112 acres (2.2%) of permanent loss and 438 acres of temporary loss.

Compared to Alternative 2, which would result in 212 acres (4.1%) of permanent habitat loss and 94 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be somewhat less, would be somewhat more under Alternatives 5 and 6, and would be substantially less under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be somewhat more and would be substantially more under Alternative 7. The difference between Alternative 7 (substantially less permanent impacts and substantially more temporary impacts) and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude compared to Alternative 2 and percentages of permanent loss would be 4.6% or less (Alternatives 5 and 6), these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for California

horned lark (**Figures 4.5-67** through **4.5-71**, Alternatives 3 through 7 Impacts to Grassland, Agriculture, and Disturbed Land Wildlife Habitat):

- Alternative 3 – 2,955 acres (57.7%) of permanent loss;
- Alternative 4 – 2,821 acres (55.1%) of permanent loss;
- Alternative 5 – 2,767 acres (54.1%) of permanent loss;
- Alternative 6 – 2,548 acres (49.8%) of permanent loss; and
- Alternative 7 – 2,087 acres (40.8%) of permanent loss.

Compared to Alternative 2, which would result in 3,079 acres (60.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 6 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, but would still be substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for California horned lark:

- Alternative 3 – 3,152 acres (61.6%) of permanent loss;
- Alternative 4 – 3,000 acres (58.6%) of permanent loss;
- Alternative 5 – 3,001 acres (58.6%) of permanent loss;
- Alternative 6 – 2,785 acres (54.4%) of permanent loss; and
- Alternative 7 – 2,200 acres (43.0%) of permanent loss.

Compared to Alternative 2, which would result in 3,291 acres (64.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect

impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be generally successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 (although Alternatives 4 and 5 would have nearly identical impacts), and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for California horned lark occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to California horned lark individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Wintering flocks may be displaced from foraging areas, and clearing or grading activities during the nesting season could result in destruction of nests, eggs, or young; interfere with foraging and provisioning; or cause nest abandonment. Impacts to individual California horned larks occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term impacts include construction-related dust, noise, ground vibration, and nighttime lighting. Increased human activity could cause nesting failures. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than implementation of the RMDP and the SCP because of the much larger area of impact.

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity; increased predation by pet, stray, and feral cats and dogs and mesopredators; secondary poisoning and loss of prey from pesticides;

nighttime lighting; Argentine ants; and cowbird nest parasitism, as described above for Alternative 2.

These secondary impacts would permanently reduce California horned lark populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts would be significant, absent mitigation under Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to California horned lark: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals outside the Project footprint.

Wintering flocks of California horned lark commonly occur in the agricultural fields and grasslands in the Project area. Nesting by this species has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, for the purpose of this analysis, it is assumed that California horned larks could nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, wintering flocks could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if California horned larks were to nest on site and active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also interfere with foraging and provisioning of young or cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the California horned lark resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,220 acres (43.0%) under Alternative 7 to 3,291 acres (64.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for foraging, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the California horned lark in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 896 acres of suitable habitat for the California horned lark in the High Country SMA and the Salt Creek area (**Figure 4.5-3**), as well as 100 acres in the River Corridor SMA.

With regard to secondary effects, foraging and, potentially, nesting activities by the California horned lark could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests, if breeding were to occur, due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests, are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include lighting; pesticides, which may cause direct and secondary poisoning and loss of prey; human disturbances of nest sites; predation and harassment by pet, stray, and feral cats and dogs and other mesopredators; Argentine ants that may prey on nestlings; and cowbird nest parasitism, which could reduce reproductive success. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 896 acres of suitable habitat in the High Country SMA and Salt Creek area and 100 acres in the River Corridor SMA will provide California horned larks with relatively undisturbed habitat for foraging and potentially nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect California horned larks by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning and loss of prey.

The specific mitigation measures for the California horned lark are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-128 IMPACTS TO INDIVIDUALS – CALIFORNIA HORNED LARK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of California horned lark individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during

development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to California horned lark individuals

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to California horned lark individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-129 LOSS OF HABITAT – CALIFORNIA HORNED LARK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for California horned lark through habitat protection, restoration and enhancement, and management.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The High Country SMA will protect and manage at least 571 acres of suitable habitat for the California horned lark.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measure to mitigate for the loss of habitat for the California horned lark through habitat protection, restoration and enhancement, and management.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes 324 acres of suitable habitat for the California horned lark.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the California horned lark would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-130 SECONDARY IMPACTS – CALIFORNIA HORNED LARK

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on the California horned lark associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such noise, increased human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for California horned lark that will offset secondary impacts by providing high-quality habitat away from development areas. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-53 and SP-4.6-59, as described above, will be implemented to mitigate impacts from increased short-term human activity associated with construction.

SP-4.6-36 through SP-4.6-42, as described above and which generally refer to habitat protection in the High Country SMA, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

SP-4.6-29 through SP-4.6-32 will be implemented to mitigate for impacts related to increased human activity in the High Country SMA through limiting access to daytime use of the designated trail system; prohibiting pets (with the exception of horses on established trails); prohibiting hunting, fishing, and motor or off-trail bike riding; and providing trail design guidelines to minimize impacts to native habitats.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to California horned lark, including short-term construction-related dust, noise, ground vibration, and increased human activity; and long-term effects such as increased human activity, predation by pet, stray, and feral cats and dogs, indirect poisoning and loss of prey from pesticide use, Argentine ants that may prey on nestlings, and cowbird nest parasitism which could reduce reproductive success.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-19, as described above, will mitigate for increased human activity in the Project area through habitat protection and management in the Salt Creek area.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to California horned lark by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the California horned lark would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

ALLEN'S HUMMINGBIRD (NESTING) (CALIFORNIA SPECIAL ANIMAL)

Life History

Two subspecies of Allen's hummingbird (*Selasphorus sasin*) are recognized (AOU 1957), but they are indistinguishable in the field. *S. s. sasin* is a smaller, migratory species that breeds in a narrow strip along the Pacific Coast from southwest Oregon south to southern California. This subspecies has never been documented breeding inland more than about 32 kilometers from the coast (Grinnell and Miller 1944), but it is possible that local inland breeding occurs since birds have been observed in northwest California during the breeding season (Small 1994). *S. s. sasin* winters in central Mexico and occasionally in the Gulf Coast region of the southeast United States (Phillips 1975; Mitchell 2000; Newfield 1983). On its way to its wintering range, Allen's hummingbird usually stays near the coast, but is also commonly observed in the mountains of southern California (Garrett and Dunn 1981) and occasionally is observed in the Sierra Nevada (Gaines 1988). *S. s. sedentarius* is larger than the nominate subspecies and is a non-migratory resident of the Channel Islands and of coastal Los Angeles (Palos Verdes Peninsula), Orange County, and extreme northern San Diego County. Breeding inland from the coast has recently been documented for this species (Mitchell 2000). It is rare to see Allen's hummingbirds during the winter except in the range of *S. s. sedentarius* (Zeiner *et al.* 1990A).

The vegetation communities most commonly used by breeding Allen's hummingbirds are coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Coastal scrub used by this species usually contains at least a scattering of trees. Allen's hummingbirds also use vegetation dominated by Douglas fir (*Pseudotsuga menziesii*), redwood (*Sequoia sempervirens*), Bishop pine (*Pinus muricata*), and non-native eucalyptus and cypress trees (*Cupressus* spp.). Live oak woodlands and urban habitats are also occasionally used (Zeiner *et al.* 1990A; Mitchell 2000). *S. s. sedentarius* populations on the Channel Islands usually use riparian woodlands and tall, dense chaparral on north-facing slopes (Yeaton and Laughrin 1976). Habitats used by *S. s. sasin* during migration include the previously described habitats as well as humid pine–oak woodland and montane chaparral, open coniferous forest, and mixed woodland habitats at higher inland elevations (Grinnell and Miller 1944; Mitchell 2000).

The breeding range of *S. s. sasin* overlaps almost exactly with the range of bush monkeyflower, one of the hummingbird's favored plants. Other plant species used by Allen's hummingbird include Indian paintbrush (*Castilleja* spp.), columbine (*Aquilegia formosa*), currants and gooseberries (*Ribes* spp.), Indian pink (*Silene laciniata, S. californica*), Indian warrior (*Pedicularis densiflora*), twinflower (*Lonicera involucrata*), penstemon (*Penstemon* and *Keckiella* spp.), ceanothus (*Ceanothus* spp.), pitcher sage (*Salvia spathacea*), madrone (*Arbutus menziesii*), and manzanita (*Arctostaphylos* spp.) (Mitchell 2000). Hedge nettle (*Stachys* spp.), California fuchsia (*Epilobium canum*), and red larkspur (*Delphinium cardinale*) provide nectar

for migrating individuals in higher elevations. Ornamentals and non-native plants such as tree tobacco are also used by the species during migration.

Nests are typically located 0.5 to 10 meters off the ground in trees or shrubs in densely vegetated areas. Willows and other dense thickets in riparian areas are common nesting sites. Bush monkeyflower as well as eucalyptus and other trees are also used. Unlike the Anna's hummingbird, which occurs sympatrically, Allen's hummingbird rarely nests near human habitation or in man-made structures.

Threats for this species are poorly defined and few concerns have been identified. Eucalyptus groves, tree tobacco, ornamental plants, and artificial feeders—all human-related food sources—provide ample quantities of nectar for this species during the fall and winter, when many native plants are not in bloom. Concerns regarding the population status primarily are based on the small geographic area of breeding and wintering range of the species. Although no specific threats have been identified for Allen's hummingbird, several potential development- and human-related impacts may affect this species' nesting and foraging activities, including construction-related dust; noise and ground vibration; and nighttime lighting. Over the long term, pet, stray, and feral cats may prey on this species. Argentine ants may also prey on nestlings, particularly in riparian areas. Invasive species in riparian areas, such as giant reed and tamarisk, also would be expected to adversely affect nesting and foraging habitat for this species.

Survey Results

The Project area provides suitable foraging, nesting, and migration habitat for Allen's hummingbird throughout the Specific Plan, VCC, and Entrada planning areas. Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2007.

Allen's hummingbird was documented numerous times in the Project area in 2004 (Guthrie 2004B, 2004C, 2004G). *Selasphorus* hummingbirds observed in other years along the Santa Clara River within and adjacent to the Specific Plan area could be either rufous hummingbird (*S. rufus*) or Allen's hummingbirds (Guthrie 2002A, 2002C; Bloom Biological 2007A, 2008). According to Bloom Biological, a few of both species (rufous or Allen's hummingbirds) undoubtedly use the Project area during migration (Bloom Biological 2007A). Most observations of *Selasphorus* hummingbirds were made in March or April. However, a few observations, including those of individuals in the VCC planning area, have been made in June or July (Guthrie 2002A, 2004C, 2004G), suggesting that some *Selasphorus* hummingbirds are residents and not just migrants in the Project area. Since rufous hummingbirds are migratory, observations made in summer are probably of the non-migratory subspecies of Allen's hummingbird.

The habitats being used by observed Allen's hummingbirds were not documented. However, because many of these observations were made during focused surveys for the coastal California gnatcatcher, a species that uses coastal scrub, it is likely that Allen's hummingbirds were observed in coastal scrub habitat. The species may have also been observed in riparian habitats, since some of the surveys during which it was observed were focused surveys for least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo. Woodland habitats, also used by Allen's hummingbirds, were also surveyed during upland surveys, although perhaps not as thoroughly as the scrub and riparian habitats. The surveys were adequate to conclude that small numbers of Allen's hummingbirds use the Project area during southward-bound migration or as year-round residents. Overall, however, this species is considered fairly uncommon in the Project area.

Suitable habitat for Allen's hummingbird in the Project area includes coastal scrub alliances and associations, southern cottonwood–willow riparian, southern willow scrub, riparian scrub (alluvial scrub, arrow weed scrub, big sagebrush scrub, big sagebrush–California buckwheat, giant reed, Mexican elderberry, mulefat scrub, southern willow scrub, and shrub tamarisk), and oak woodlands (coast live oak woodland, mixed oak woodland and forest, and valley oak woodland). A total of 6,331 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 102 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.6% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 53 acres would be temporarily impacted.

Allen’s hummingbird is still a wide-ranging species and uses a variety of scrub, riparian, and woodland habitats. The construction of RMDP facilities would be phased over a long

period of time and thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 102 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 1,627 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 25.7% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

A relatively large amount and percentage of suitable habitat on site for Allen's hummingbird would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 25.7% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,729 acres (27.3%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of Allen's hummingbird in the Project area, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Based on the results from past surveys, Allen's hummingbird is considered fairly common in the Project area. Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds of this species, but foraging individuals may be displaced from construction areas. Implementation of the SCP would not directly impact this species. Though this species has not been observed nesting on site, the Project area is within the species' nesting range. Also, *Selasphorus* hummingbirds have been documented in the Project area during the summer, when migratory *Selasphorus* hummingbirds would have already passed through the area (Guthrie 2002A, 2004B, 2004C, 2004G). Because the rufous hummingbird is exclusively migratory in the Project region, *Selasphorus* hummingbirds documented in the Project area during the summer are likely the non-migratory subspecies of Allen's hummingbird. As year-round residents, therefore, these individuals probably use the Project area for breeding. Clearing or grading activities occurring during the nesting season could result in destruction of nests, eggs, or young, interfere with foraging and provisioning of young, or cause nest abandonment. These impacts would be a substantial adverse impact on this species (significance criterion 1). Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals, but over a much larger area. Foraging individuals may be displaced from construction areas, and clearing or grading activities occurring during the nesting season could result in the destruction of nests, eggs, or young, interference with foraging and provisioning of young, or abandonment of nests (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the breeding season would have the potential to affect Allen's hummingbirds in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination. Dust may degrade foraging habitat quality, noise and ground vibration could disrupt foraging and nesting activities, and nighttime illumination could induce physiological stress and increase predation by nocturnal predators. Potential long-

term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity, which may affect nesting behavior; and greater vulnerability to nocturnal predators as a result of nighttime lighting, as well as greater vulnerability to predation by pet, stray, and feral cats and other mesopredators within about 200 feet of the urban–open space edge. Attraction of Argentine ants to moist habitats, especially riparian areas, could result in predation on nestlings. These secondary impacts would permanently reduce Allen's hummingbird populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area (significance criteria 1 and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Allen's hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 85 acres (1.3%) of permanent loss and 55 acres of temporary loss;
- Alternative 4 – 85 acres (1.3%) of permanent loss and 50 acres of temporary loss;
- Alternative 5 – 99 acres (1.6%) of permanent loss and 61 acres of temporary loss;
- Alternative 6 – 79 acres (1.3%) of permanent loss and 58 acres of temporary loss; and
- Alternative 7 – 35 acres (0.5%) of permanent loss and 71 acres of temporary loss.

Compared to Alternative 2, which would result in 102 acres (1.6%) of permanent habitat loss and 53 acres of temporary impacts, the permanent loss of habitat under Alternative 5 would be not substantially different; Alternatives 3, 4, and 6 would be somewhat less; and Alternative 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3, 4, 5, and 6 would be not substantially different to marginally greater, while Alternative 7 would be somewhat more. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude to overall habitat loss under Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for Allen's hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,515 acres (23.9%) of permanent loss;
- Alternative 4 – 1,469 acres (23.2%) of permanent loss;
- Alternative 5 – 1,419 acres (22.4%) of permanent loss;
- Alternative 6 – 1,146 acres (18.1%) of permanent loss; and
- Alternative 7 – 1,061 acres (16.8%) of permanent loss.

Compared to Alternative 2, which would result in 1,627 acres (25.7%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to Allen's hummingbird suitable habitat under Alternative 7 compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than overall habitat loss under Alternative 2, but still substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Allen's hummingbird:

- Alternative 3 – 1,600 acres (25.3%) of permanent loss;
- Alternative 4 – 1,553 acres (24.5%) of permanent loss;
- Alternative 5 – 1,518 acres (24.0%) of permanent loss;
- Alternative 6 – 1,226 acres (19.4%) of permanent loss; and
- Alternative 7 – 1,096 acres (17.3%) of permanent loss.

Compared to Alternative 2, which would result in 1,729 acres (27.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for Allen's hummingbird occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to Allen's hummingbird individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Foraging individuals may be displaced from construction areas, and clearing or grading activities occurring during the nesting season could result in the destruction of nests, eggs, or young, interference with foraging and provisioning of young, or abandonment of nests (significance criterion 1). Impacts to individual Allen's hummingbirds occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban

development. Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity, and increased predation from nocturnal predators; pet, stray, and feral cats; and Argentine ants; as described above for Alternative 2. These secondary impacts would permanently reduce Allen's hummingbird populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to Allen's hummingbird: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Allen's hummingbird has been commonly observed on site. Nesting by this species has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, but suitable nesting habitat is present and the species has been observed during the nesting season. For the purpose of this analysis, it is assumed that Allen's hummingbirds could nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if Allen's hummingbirds were to nest on site and active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also interfere with foraging and provisioning of young, and cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the Allen's hummingbird resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,096 acres (17.3%) under Alternative 7 to 1,729 acres (27.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for foraging and, potentially, nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the Allen's hummingbird in the Project vicinity. Implementation of these mitigation

measures will result in protection and management of 3,579 acres of the suitable habitat for this species in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging and, potentially, nesting activities by the Allen's hummingbird could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests, if breeding were to occur, due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include increased human activity; lighting; and predation by pet, stray, and feral cats and Argentine ants. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 3,579 acres of suitable habitat in the River Corridor, High Country SMA, and Salt Creek area will provide Allen's hummingbirds with relatively undisturbed habitat for foraging and potentially nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Allen's hummingbirds by allowing them to nest and forage without disturbance. Argentine ant monitoring and controls will be implemented.

The specific mitigation measures for the Allen's hummingbird are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-131 IMPACTS TO INDIVIDUALS – ALLEN'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Allen's hummingbird individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during

development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Allen's hummingbird individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Allen's hummingbirds would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-132 LOSS OF HABITAT – ALLEN'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for Allen's hummingbird through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor

SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 380 acres of suitable habitat for Allen's hummingbird**.** The High Country SMA will preserve and enhance at least 2,187 acres of suitable habitat for Allen's hummingbird.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for Allen's hummingbird through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years

or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Implementation of BIO-19, BIO-20, and BIO-21 will minimize and mitigate impacts to Allen's hummingbird by preserving and restoring a large amount of suitable habitat in three interconnected preserved open space areas: the High Country SMA, Salt Creek area, and River Corridor SMA. Implementation of BIO-1 through BIO-16 will ensure that through restoration activities, riparian areas remain high-quality suitable habitat for Allen's hummingbird.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat shall be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for Allen's hummingbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-133 SECONDARY IMPACTS – ALLEN'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on Allen's hummingbird associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as abandonment of nests due to human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and that generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Allen's hummingbird, including short-term, construction-related dust, noise, ground vibration,

and increased human activity; and long-term effects such as, increased human activity, greater vulnerability to predation by pet, stray, and feral cats and Argentine ants.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent

feasible. This measure will also reduce impacts to Allen's hummingbird by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Allen's hummingbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

BELL'S SAGE SPARROW (NESTING) (BCC, WL)

Life History

The sage sparrow (*Amphispiza belli*) occurs in western North America from interior west-central Washington east through western Wyoming and south through northern Baja California and Mexico. This distribution includes the states of Idaho, California, Nevada, Colorado, New Mexico, Arizona, and Texas. In California, the sage sparrow occurs east of the Cascade Range, in the Sierra Nevada, on the western edges of the Owens Valley and the Mojave Desert, in the foothills surrounding the Central Valley, and in the Transverse, Peninsular, and Coast Ranges (Zeiner *et al.* 1990A).

Five subspecies of sage sparrow are recognized, two of which are migratory (County of Riverside 2008). The subspecies Bell's sage sparrow (formerly known as Bell's sparrow), *A. b. belli*, occurs as a nonmigratory resident on the western slope of the central Sierra Nevada Range and in the coastal ranges of California southward from Marin County and Trinity County, extending into north-central Baja California (County of Riverside 2008).

The sage sparrow occupies semi-open habitats with evenly spaced shrubs that are one to two meters (3.3 to 6.6 feet) high (County of Riverside 2008). For site selection, specific shrub species may be less important than overall vertical structure, habitat patchiness, and vegetation density (Wiens and Rotenberry 1981). Bell's sage sparrow is uncommon to fairly common in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and lower foothills of the mountains within its range. The Bell's sage sparrow often occupies chamise chaparral in the northern part of its range (Gaines 1988; Unitt 1984) and in coastal San Diego County (Bolger *et al.* 1997). High, overgrown chaparral stands generally have fewer sage sparrows than shorter shrubs recovering from recent fires. At higher elevations in southern California, Bell's sage sparrow often occurs in big sagebrush (County of Riverside 2008). Because the species is often missing from what appears to be suitable habitat, researchers postulate that other unknown habitat characteristics may be important (County of Riverside 2008). Sage sparrows seek cover in fairly dense stands in chaparral and scrub habitats during the breeding season.

Sage sparrows primarily forage on the ground, usually near or under the edges of shrubs (Zeiner *et al.* 1990A; County of Riverside 2008). During the breeding season, the species consumes adult and larval insects, spiders, seeds, small fruits, and succulent vegetation (County of Riverside 2008).

Bell's sage sparrow usually nests in sagebrush or chaparral, and may have two broods per nesting season (Ehrlich *et al.* 1988). It prefers to nest in shrubs of intermediate size, usually between 50 and 70 centimeters (1.6 and 2.3 feet) tall. Shrubs of this size usually provide favorable foraging sites, avenues of movement, and sufficient cover. Nest site selection is probably more

influenced by structure and density of shrubs than by shrub species (County of Riverside 2008). Host shrubs tend to have at least 75% live material. In areas that are more open, nest sites are selected within clumps of shrubs (County of Riverside 2008). In Riverside County, nests of Bell's sage sparrow have been found in brittlebush, black sage, California buckwheat, California sagebrush, and bush mallow. In other locations, chamise, white sage, cholla, ceanothus, and willows have been used by the species (County of Riverside 2008). Sage sparrows also nest occasionally in bunchgrass or on the ground under shrubs (County of Riverside 2008).

Breeding territory sizes for the sage sparrow vary widely, ranging from 24 to over 40 pairs per 40 hectares (100 acres). Territory boundaries may change slightly from day to day, but typically do not overlap (County of Riverside 2008). Territories for Bell's sage sparrow in San Diego and Riverside counties varied from 0.75 to 5.7 hectares (1.9 to 14.1 acres) (County of Riverside 2008). In an earlier study in Riverside County (Carlson 1983), breeding densities for this subspecies were 94 to 111 territories per square kilometer (241 to 284 territories per square mile) in unburned coastal sagebrush scrub.

The largest threat to the sage sparrow is the loss and fragmentation of appropriate shrub habitat. Like other species, it has lost suitable habitat to urbanization and agricultural conversion, especially in southern California (County of Riverside 2008). Fragmentation of shrubland habitats, whether by wildfire, shrub die-off, or human-caused disturbance, significantly affects sage sparrows. This species is more likely to remain in an area that has high shrub cover, low disturbance, large patch sizes, and high within-site spatial similarity. Bell's sage sparrow occurs less often in small patches and near developed edges (Carlson 2002; Bolger *et al.* 1997). In one study in San Diego County (Bolger *et al.* 1997), it was one of four species (of many studied) whose abundance was most reduced by habitat fragmentation. This species is also vulnerable to brown-headed cowbird nest parasitism (County of Riverside 2008), which is increased near habitat edges. Grazing may result in habitat degradation and reduction of populations, such as on San Clemente Island where removal of grazing animals resulted in the recovery of native vegetation and sage sparrow populations (County of Riverside 2008). Proximity to humans also increases the possibility of predation by domestic cats.

Sage sparrows are also affected by fire frequencies (Chase and Carlson 2002). Bell's sage sparrow in particular prefers areas where shrub cover is relatively low and dispersed (Lovio 1999). Long-term fire suppression promotes tall, dense shrublands that are not suitable sage sparrows (County of Riverside 2008). However, if fires occur too frequently, sage sparrows abandon habitats where non-native annual grasses replace shrubs.

Other development- and human-related impacts that could affect this species include construction-related dust; noise and ground vibration; nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators; and pesticides, which may reduce vegetative food sources (seeds) and prey or cause secondary poisoning. Areas of

increased moisture along the open space–urban interface may attract Argentine ants that prey on nestlings.

Survey Results

Suitable chaparral and coastal scrub habitat for Bell's sage sparrow is located throughout the Project area. Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2008.

Bell's sage sparrow has never been detected within the Project area, but two individuals were observed in April 2004 during a focused bird survey in the Legacy Village project site (Guthrie 2004C). This site is adjacent to the Specific Plan area, just south of Mission Village and east of Potrero Village. Like the Specific Plan site, the Legacy Village project site contains California sagebrush scrub and other upland habitats suitable for Bell's sage sparrow. Individuals in the Legacy Village project site were observed in dry sage scrub habitat on cliffs near the eastern edge of the study site and probably nest in small numbers in the area (Guthrie 2004C).

Most of the upland surveys for birds were focused surveys for coastal California gnatcatcher. Because the gnatcatcher uses similar (although denser) coastal scrub habitat, the gnatcatcher surveys would have resulted in detection of Bell's sage sparrow wherever this species was present in coastal scrub habitat. However, Bell's sage sparrows also use chaparral habitats, which might not have been surveyed as thoroughly as scrub habitats because they are not used by California gnatcatchers and are often too dense to penetrate. Bloom Biological, Inc. (2007A, 2008), considers the Bell's sage sparrow to be a resident in chamise-dominated chaparral and in sage scrub along ridgelines throughout much of the Santa Clara Valley; however, it was not detected in the 2007 survey, which extended marginally into typical sage sparrow habitat on the higher slopes and ridgelines. Based on surveys and an evaluation by Bloom Biological, Inc. (2007A, 2008), the Bell's sage sparrow is considered a likely resident in the chaparral habitat but it probably does not occur in high numbers because the species has not been detected for over a dozen years during surveys of suitable sage scrub habitat. It could, however, be present within the chaparral habitat on site. Suitable habitat for Bell's sage sparrow, based on the species life history information provided above, generally includes scrub and chaparral. However, based on the results of Guthrie and Bloom studies summarized above that included surveys of scrub habitats as part of focused surveys for the California gnatcatcher, the Bell's sage sparrow does not appear to use the coastal scrub habitats on site. This species is known to also occur in chaparral, perhaps predominantly within this region (Garrett and Dunn 1981), and may be using chaparral habitat exclusively, thus explaining the lack of observation over the many years of surveys of sage scrub habitats. Thus, for the purposes of this EIS/EIR analysis, the suitable habitat for Bell's sage sparrow is considered to be chaparral vegetation communities, including undifferentiated chaparral scrubs, chamise chaparral, and scrub oak chaparral. A total of 2,146 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 26 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.2% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 1.5 acres would be temporarily impacted.

The Bell's sage sparrow is still a wide-ranging species, but probably occurs in low numbers on site given the few observations of the species in the Project vicinity (*i.e.*, two observations in Legacy Village). The construction of RMDP facilities would be phased over a long period of time and approximately 1,494 acres of suitable habitat would be available for this species in the High Country SMA and Salt Creek area at any given time. Therefore, the permanent loss of 26 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 431 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 20.1% of suitable

habitat on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

A relatively large amount and percentage of suitable habitat for Bell's sage sparrow would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 22.1% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 457 acres (21.3%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of Bell's sage sparrow in the Project area, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because the Bell's sage sparrow is highly mobile, it is unlikely that RMDP-related construction activities would result in mortality of adult birds of this species. However, birds would be physically displaced from occupied habitat. Implementation of the SCP would not directly impact this species. This species has not been observed nesting on site; however, it is considered likely to be present based on its presence on the Legacy Village project site. Bell's sage sparrow is a non-migratory subspecies, thus, if present, it would nest on site, and vegetation clearing or grading during the nesting season could result in destruction of nests, eggs, or young, or cause nest abandonment. Because of the special status of this bird species and the potential for injury or mortality of individual birds and, specifically, for destruction of nest, eggs, or young; interference with foraging and provisioning of young, resulting in reduced survivorship; or nest abandonment; such impacts would have a substantial direct adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals, but over a much larger area. Construction and/or grading activities may occur during the nesting season and could result in the destruction of nest, eggs, or young, interfere with forging and provisioning of young, or cause nest abandonment. These impacts would have a substantial adverse impact on this species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the breeding season would have the potential to affect Bell's sage sparrow in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime lighting. Dust could degrade habitat quality, noise and ground vibration could affect nesting and foraging behavior, and nighttime lighting could induce physiological stress and increase predation by nocturnal predators. Potential long-term development-related secondary impacts include habitat fragmentation, habitat degradation from frequent wildfires, increased human activity, nighttime illumination, potential harassment by humans and pet, stray, and feral cats and dogs and other mesopredators, loss of food sources and secondary poisoning from pesticides, and cowbird nest parasitism and predation of nestlings by Argentine ants along the open space–development interface.

These short-term and long-term secondary impacts would permanently reduce the number of Bell's sage sparrows that may occur along the urban–open space edge, interfere with the movement of the species between habitat areas due to fragmentation, and contribute to the reduction of the range and distribution of the Bell's sage sparrow in the Project area (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Bell's sage sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 25 acres (1.2%) of permanent loss and 1.8 acres of temporary loss;
- Alternative 4 – 27 acres (1.3%) of permanent loss and 1.5 acres of temporary loss;
- Alternative 5 – 27 acres (1.3%) of permanent loss and 1.8 acres of temporary loss;
- Alternative 6 – 24 acres (1.1%) of permanent loss and 1.8 acres of temporary loss; and
- Alternative 7 – 21 acres (1.0%) of permanent loss and 9.1 acres of temporary loss.

Compared to Alternative 2, which would result in 26 acres (1.2%) of permanent habitat loss and 1.5 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 7 would not be substantially different. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would not be substantially different and Alternative 7 would be substantially more. The difference between Alternative 7 impacts and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts to Bell's sage sparrow suitable habitat compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude to the overall loss of habitat under Alternative 2, impacts under Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Bell's sage sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 417 acres (19.4%) of permanent loss;
- Alternative 4 – 408 acres (19.0%) of permanent loss;
- Alternative 5 – 409 acres (19.1%) of permanent loss;
- Alternative 6 – 407 acres (18.9%) of permanent loss; and
- Alternative 7 – 327 acres (15.2%) of permanent loss.

Compared to Alternative 2, which would result in 431 acres (20.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would generally be successive reductions in

the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to Bell's sage sparrow suitable habitat compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be somewhat or substantially less than overall habitat loss under Alternative 2, but still substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Bell's sage sparrow:

- Alternative 3 – 443 acres (20.6%) of permanent loss;
- Alternative 4 – 435 acres (20.3%) of permanent loss;
- Alternative 5 – 436 acres (20.3%) of permanent loss;
- Alternative 6 – 431 acres (20.1%) of permanent loss; and
- Alternative 7 – 348 acres (16.2%) of permanent loss.

Compared to Alternative 2, which would result in 457 acres (21.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7; there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7. There would be additional pullbacks from the Santa Clara River and its tributaries and other reductions to the Project footprint under Alternative 7 that would reduce impacts to Bell's sage sparrow suitable habitat compared to the other alternatives. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for Bell's sage sparrow occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential impacts to Bell's sage sparrow individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Individuals could be displaced from occupied habitat by construction activities, and construction occurring during the nesting season could result in the destruction of nest, eggs, or young; interfere with foraging and provisioning of young, resulting in reduced survivorship; or cause nest abandonment. These impacts to individual Bell's sage sparrows occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination, that could cause habitat degradation, disrupt nesting and foraging activities, and cause abandonment of nests. Potential long-term secondary impacts include habitat fragmentation, habitat degradation due to wildfire, increased human activity, nighttime illumination, increased predation, secondary poisoning, and cowbird parasitism, as described above for Alternative 2. These secondary impacts would permanently reduce Bell's sage sparrow populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to Bell's sage sparrow: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and habitat outside the Project footprint.

Bell's sage sparrow has not been observed in the Project area, but the species has been observed on the adjacent Legacy Village site. It is assumed to occur and nest in habitat on site that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from occupied habitat by construction activities.

Impacts to individuals also could occur if active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young, or interfering with foraging or provisioning of young. Construction activities may also cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the Bell's sage sparrow resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 348 acres (16.2%) under Alternative 7 to 457 acres (21.3%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the Bell's sage sparrow in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 1,488 acres of suitable habitat for the Bell's sage sparrow in the High Country SMA and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging and nesting activities by the Bell's sage sparrow could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate territories and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; wildfire; increased human activity; lighting; pesticides, which may cause secondary poisoning and loss of food sources; harassment by pet, stray, and feral cats and dogs and other mesopredators; Argentine ants that may prey on nestlings; and cowbird nest parasitism, which could reduce reproductive success. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of approximately 1,488 acres of suitable habitat in the High Country SMA and Salt Creek area will provide Bell's sage sparrows with relatively undisturbed habitat. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Bell's sage sparrows by allowing them to nest

and forage without disturbance. Cowbird trapping will be conducted, as necessary. Controls on pesticides will reduce the chance of secondary poisoning and loss of food sources.

The specific mitigation measures for the Bell's sage sparrow are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-134 IMPACTS TO INDIVIDUALS – BELL'S SAGE SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Bell's sage sparrow individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Bell's sage sparrow individuals

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Bell's sage sparrow individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-135 LOSS OF HABITAT – BELL'S SAGE SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for Bell's sage sparrow through habitat protection, restoration and enhancement, and management.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The High Country SMA will protect and manage approximately 1,362 acres of suitable habitat for Bell's sage sparrow.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measure to mitigate for the loss of habitat for Bell's sage sparrow through habitat protection, restoration and enhancement, and management.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes 125 acres of suitable habitat for the Bell's sage sparrow.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the Bell's sage sparrow would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-136 SECONDARY IMPACTS – BELL'S SAGE SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as habitat fragmentation, increased human activity, inadvertent impacts to habitat during construction, and nighttime lighting.

SP-4.6-36 through SP-4.6-42, as described above, refer to habitat protection and management in the High Country SMA that will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the High Country SMA. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within the High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to biological resources outside the grading area in the High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Bell's sage sparrow, including short-term construction-related dust, noise, ground vibration and increased human activity as well as long-term habitat fragmentation; increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators, as well as Argentine ants; loss of food sources and secondary poisoning from pesticide use; and cowbird nest parasitism.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-19, as described above, will mitigate for habitat fragmentation effects and increased human activity in the Project area through habitat protection and management in the Salt Creek area.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to Bell's sage sparrow by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the Bell's sage sparrow would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

BLACK-CHINNED SPARROW (NESTING) (BCC, CALIFORNIA SPECIAL ANIMAL)

Life History

The black-chinned sparrow (*Spizella atrogularis*) occurs from central Mexico north to California, Arizona, New Mexico, Baja California, western Texas, and the southernmost regions of Nevada and Utah. In most of the United States and all of California, this species is not a year-round resident, but migrates south for the winter. In California, the black-chinned sparrow breeds in the inner North Coast Ranges, South Coast Ranges, and on the western slopes of the Sierra Nevada from Kern County north to Mariposa County. It occurs rarely in Shasta and Trinity Counties, on the eastern slope of the Sierra Nevada, and in the White Mountains (Tenney 1997; Winter 2002; Zeiner *et al.* 1990A). In Los Angeles County, this species breeds in the San Gabriel Mountains and occasionally in the Santa Monica Mountains (Winter 2002). Four subspecies of black-chinned sparrow are recognized (Tenney 1997; Winter 2002), two of which occur in California.

Climate and weather seem to affect the distribution of the black-chinned sparrow. In 1984 and 1985, black-chinned sparrows were observed in northern California far north of their normal range limits. This unusual event may have been driven by drought conditions, however similar conditions several years later did not lead to another irruption (Tenney 1997). In contrast, after a wet winter in 1992 and 1993, unusually high numbers of black-chinned sparrows were observed in Santa Barbara County (Tenney 1997).

The black-chinned sparrow occupies arid brushlands and chaparral although it less commonly occurs in coastal sage scrub (Unitt 2004; Garrett and Dunn 1981). The species may use open chaparral (Garrett and Dunn 1981), but usually favors moderately dense but not overgrown chaparral of mixed species and shows lowest numbers in thick old chaparral on north-facing slopes (Tenney 1997; Unitt 2004). In prime habitat, it can occur in large concentrations (Unitt 2004). The vegetation in which they occur is usually too dense to easily walk through (NatureServe 2007). Their suitable shrub habitat is typically 1 to 2 meters (3.3 to 6.6 feet) tall and often broken by rocky outcrops and scattered with larger shrubs or trees. In California, the black-chinned sparrow occurs in mixed chaparral, chamise–redshank chaparral, sagebrush, and in the understory of sparse pinyon–juniper, juniper, and other conifer habitats. In San Diego and Los Angeles counties, the black-chinned sparrow prefers chamise mixed with manzanita, our Lord's candle, scrub oak, and ceanothus. The black-chinned sparrow readily recolonizes recovering burned chaparral (Unitt 2004). The slopes on which the black-chinned sparrow occurs are usually south-facing and vary from gentle to steep (NatureServe 2007; Tenney 1997). The species is found from sea level to nearly 2,700 meters (8,860 feet) AMSL in elevation (NatureServe 2007).

The diet of the black-chinned sparrow consists of adult and larval insects in the breeding season and small seeds during the winter (Weathers 1983; NatureServe 2007).

Nests are usually built by females above the ground in dense shrubs. Pairs are usually observed near their nests and the size of any pair's territory may vary with habitat. Singing males are more closely spaced in moderately dense chaparral dominated by chamise than in overgrown scrub oak and sagebrush with scattered pines. One researcher (Tenney 1997) documented territories of 1.6 to 4.0 hectares (4.0 to 10 acres) per pair. Density estimates also vary based on habitat and may be misleading because the species may be locally common on one hillside, then absent for long stretches of similar habitat. Four pairs per square mile (260 hectares) were observed in sagebrush in the Providence Mountains Relative densities are particularly high in the arid chaparral slopes of Los Angeles compared to other regions sampled in the Breeding Bird Survey between 1966 and 1991 (Tenney 1997).

Populations of black-chinned sparrows are declining in California, especially in the privately owned foothills of California that are being developed rapidly (NatureServe 2007; Tenney 1997; Winter 2002). Between 1980 and 2000, a 2.2% decrease per year in numbers in California was recorded, compared to a 0.2% decrease elsewhere in the bird's range, although the data were highly variable, and had small sample sizes and low detection rates (Sauer *et al.* 2001). Bolger *et al.* (1997) concluded that the black-chinned sparrow is highly sensitive to habitat fragmentation; however, this conclusion assumed that the individuals were uniformly distributed over their study area prior to urbanization. Black-chinned sparrow distributions may vary, from occurring in very dense populations to not being present at all for large expanses within the same patch of habitat (Unitt 2004); therefore, the assumption of uniform distribution may not be accurate and these results should be viewed with caution. Overgrazing may also degrade the chaparral habitat, and overgrazing of grasslands during the winter may affect grass seed abundance, which is this species' primary food source during winter (Tenney 1997). Off-road vehicles have caused degradation of breeding habitat on San Benito Mountain in San Benito County, California (Tenney 1997). Other development- and human-related impacts that could affect this species include construction-related dust; noise and ground vibration; nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators; and pesticides, which may reduce prey or cause secondary poisoning. Areas of increased moisture along the open space–urban interface may attract Argentine ants that prey on nestlings.

Survey Results

Suitable chaparral and coastal scrub habitat for the black-chinned sparrow is located throughout the Project area. Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2008.

The black-chinned sparrow was not detected within the Project area or region during any of these surveys. Most of the upland surveys for birds were focused surveys for coastal California gnatcatcher. Because the gnatcatcher uses similar (although denser) coastal scrub habitat, the gnatcatcher surveys would have resulted in detection of the black-chinned sparrow if this species

was commonly present in coastal scrub habitat. However, black-chinned sparrows also use chaparral habitats, which might not have been surveyed as thoroughly as scrub habitats because they are not used by California gnatcatchers and are often too dense to penetrate. Bloom Biological, Inc. (2008) evaluated the potential for this species to occur and concluded that although it has not been observed, it is likely to occur as a migrant on coastal scrub- and chaparral-covered hillsides and a few may remain to breed on rugged slopes. However, because the species has not been detected on site for over a dozen years, it is not believed to commonly occur within the Project area and it is not expected to breed on site. Because suitable habitat is present in the Project area and it could occur as a migrant, potential impacts to this species are analyzed in this EIS/EIR. For the purposes of this EIS/EIR analysis, the suitable habitat for black-chinned sparrow is considered to be chaparral (undifferentiated chaparral scrubs, chamise chaparral, and scrub oak chaparral) and coastal scrub alliances and associations. A total of 6,574 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 80 acres of suitable habitat would be directly permanently lost through implementation of the RMDP and the SCP, representing 1.2% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 9.0 acres would be directly temporarily impacted.

The black-chinned sparrow is still a wide-ranging species and not expected to commonly occur on site (if it did occur, it would be in very small numbers). The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable chaparral habitat in the High Country SMA and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 80 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during

construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 1,971 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 30.0% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

While a relatively large amount and percentage of suitable winter foraging habitat and potential breeding habitat for low numbers of the black-chinned sparrow would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas, based on the absence of observations of this species on site and expected rare occurrence as a migrant, this habitat is expected to be rarely used for foraging or nesting by black-chinned sparrows. Furthermore, during migration black-chinned sparrows use coastal scrub and chaparral habitats throughout the state and are not restricted to any one migration route or winter habitat area. For these reasons, the loss of 30% of the habitat on site would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,051 acres (31.2%). Although a large amount and percentage of habitat would be lost, for the reasons cited above, a loss of 31.2% of suitable habitat on site would not have a substantial adverse effect on the black-chinned sparrow. The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because this species is highly mobile and uses the site rarely, if at all, for either nesting or foraging, direct impacts from implementation of the RMDP and the SCP would be highly unlikely to result in injury or mortality of adults or destruction of nests, young, or eggs as a result of vegetation clearing or grading activities. Furthermore, pre-construction surveys for nesting birds are required by EIS/EIR Mitigation Measure BIO-56, so, in the unlikely event that the species nested on site, no nests, eggs, nestlings, and/or fledglings would be lost as a direct result of construction activities. Any migrants on site during construction activities may be displaced from removed habitat, but there would be substantial available habitat for this species elsewhere in the Project vicinity. Because no substantial impacts from implementation the RMDP and the SCP are expected to occur, the Project would not have a substantial direct adverse effect on this species; cause the species population to drop below self-sustaining levels on site or rangewide; interfere with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals. The black-chinned sparrow is highly mobile and not expected to nest on site. Individuals may be displaced from suitable habitat, but no injury or mortality of adults or destruction of nests, eggs, or young is expected to occur. Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect this species in suitable habitat adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination that could inhibit the species from using suitable habitat for foraging or nesting. However, the species is only expected to use the site rarely as a migrant or for breeding, and would likely occur in very low numbers based on an evaluation of the habitat on site (Bloom Biological 2007A). The potential for short-term secondary impacts to the black-chinned sparrow is very low.

Potential long-term secondary effects, such as habitat fragmentation impacts; increased human activity; increased pet, stray, and feral cats and dogs; and pesticide use are unlikely to

substantially affect this species because it can use a variety of coastal scrub and chaparral habitats within the region and is highly mobile. The species would not be vulnerable to the nest predation issues associated with development edges because it is not known to nest in the Project region.

For these reasons, potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the black-chinned sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 76 acres (1.2%) of permanent loss and 12 acres of temporary loss;
- Alternative 4 – 77 acres (1.2%) of permanent loss and 8.7 acres of temporary loss;
- Alternative 5 – 82 acres (1.2%) of permanent loss and 14 acres of temporary loss;
- Alternative 6 – 68 acres (1.0%) of permanent loss and 16 acres of temporary loss; and
- Alternative 7 – 42 acres (0.6%) of permanent loss and 43 acres of temporary loss.

Compared to Alternative 2, which would result in 80 acres (1.2%) of permanent habitat loss and 9.0 acres of temporary impacts, the permanent loss of habitat would not be substantially different under Alternatives 3 through 5, and would be somewhat less under Alternatives 6 and 7. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternatives 3 through 6 and would be somewhat greater under Alternative 7. Alternative 7 would have reduced permanent impacts and greater temporary impacts to black-chinned sparrow habitat compared to the other alternatives, primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

The overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be less than or similar in magnitude to the overall loss of habitat under Alternative 2, and would be somewhat greater under Alternative 7; therefore, for the reasons cited above for Alternative 2, the impacts under Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the black-chinned sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 1,866 acres (28.4%) of permanent loss;
- Alternative 4 – 1,814 acres (27.6%) of permanent loss;
- Alternative 5 – 1,766 acres (26.9%) of permanent loss;
- Alternative 6 – 1,517 acres (23.1%) of permanent loss; and
- Alternative 7 – 1,349 acres (20.5%) of permanent loss.

Compared to Alternative 2, which would result in 1,971 acres (30.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce the loss of suitable habitat for black-chinned sparrow compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be substantially less than the overall loss of habitat under Alternative 2, these impacts would be adverse but not significant under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the black-chinned sparrow:

- Alternative 3 – 1,942 acres (29.5%) of permanent loss;
- Alternative 4 – 1,892 acres (28.8%) of permanent loss;
- Alternative 5 – 1,848 acres (28.1%) of permanent loss;
- Alternative 6 – 1,586 acres (24.1%) of permanent loss; and
- Alternative 7 – 1,391 acres (21.2%) of permanent loss.

Compared to Alternative 2, which would result in 2,051 acres (31.2%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7; there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7. There would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for black-chinned sparrow compared to the other alternatives.

Because the overall combined loss of habitat from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be substantially less than the overall loss of habitat under Alternative 2, these impacts would be adverse but not significant under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to black-chinned sparrow individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2. Migrant individuals may occasionally be displaced from suitable habitat, but injury or mortality of adults or destruction of nests, eggs, or young is not expected to occur. Therefore, this impact (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Because of the low probability of the black-chinned sparrow occurring on site

either as a migrant or for breeding, short-term and long-term secondary impacts would be adverse but not significant under Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the black-chinned sparrow because all impacts were determined to be adverse but not significant. As noted above, BIO-56 requires pre-construction surveys for all native nesting birds to determine if active nests are present in the disturbance zone or within 300 feet (500 feet for raptors). If active nests are found, clearing and construction in the vicinity will be postponed at the discretion of the biologist, until the nest is vacated. This measure will protect black-chinned sparrow nests in the unlikely event it nests on site in the future within or adjacent to development areas, and no black-chinned sparrow nests, eggs, nestlings, and/or fledglings would be lost as a direct result of construction activities. Several other mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 3,487 acres of suitable habitat in the High Country SMA, Salt Creek area, and River Corridor SMA. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because individuals will have access to foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects such as habitat degradation; increased human activity; pet, stray, and feral cats and dogs; lighting; and pesticides will also be mitigated through a variety of measures.

COSTA'S HUMMINGBIRD (NESTING) (CALIFORNIA SPECIAL ANIMAL)

Life History

Costa's hummingbird (*Calypte costae*) is found in southern California, Arizona, Baja California, and western Mexico, but also extends into Nevada, extreme southeastern Utah, and southeastern New Mexico. This species is most abundant in the deserts of southern California and Arizona from March to April at the height of the breeding season. Costa's hummingbird breeds along the western edge of the San Joaquin Valley and the eastern edge of the Sierra Nevada (McCaskie *et al.* 1979). In winter, it is largely restricted to the southern coast, but it also winters in southern deserts (Garrett and Dunn 1981). Most desert breeders depart by late May, but numbers remain high on the coast until late September (Zeiner *et al.* 1990A). There is upslope movement after breeding and during fall migration (Garrett and Dunn 1981).

Costa's hummingbird occurs primarily in more arid habitats than where other hummingbirds occur in California. Primary habitats are desert wash, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent scrub, lower-elevation chaparral, and palm oasis (Zeiner *et al.* 1990A). Along the California coast and in coastal mountain ranges, the species uses xeric habitats, especially California coastal scrub or sage scrub and dry open stretches of chaparral (Garrett and Dunn 1981; Unitt 1984; Baltosser and Scott 1996). Costa's hummingbirds in the Santa Monica Mountains have a strong preference for the drier and more open expanses in and around the mountains, including southern and western exposures, sage-covered slopes, and oak savannas (Baltosser and Scott 1996). In the San Gabriel Mountains, they occur in foothills, in chaparral and coastal scrub communities where the shrub canopy is sparse, and where black sage is abundant (Baltosser and Scott 1996). Costa's hummingbird is a persistent breeder in suburbs and coastal scrub remnants on the Palos Verdes peninsula and elsewhere, but the species is not as successful as Anna's hummingbird (Wells *et al.* 1978).

Costa's hummingbirds are nectar feeders, but also forage for spiders and small insects. Black sage and white sage are common nectar sources in late April to June; heart-leaved penstemon and tree tobacco are common from July to August; and woolly bluecurls and bush-monkeyflower are also visited (Baltosser and Scott 1996). On burned areas, the species is attracted to sticky nama, vinegarweed, and purple penstemon as well as to black sage (Baltosser and Scott 1996). In winter, exotic shrubs such as bottlebrush are an important food source (Garrett and Dunn 1981).

Nests are placed in a wide variety of trees, cacti, shrubs, woody forbs, and sometimes vines (Baltosser and Scott 1996). Territory size of the male is often quite large and is typically 1.0 to 1.5 hectares (2.5 to 3.7 acres), containing scattered tall perches and many food sources (Zeiner *et al.* 1990A). After fledging, juveniles often remain near the nest, but dispersal information thereafter is not known for this species (Baltosser and Scott 1996).

The main threat to Costa's hummingbird is loss of habitat. The species relies on several habitats threatened by development, such as coastal scrub habitat. In southern California, Costa's hummingbird has shown some adaptability to agricultural and urban development; it has been documented to breed in orchards in Los Angeles County, and it presently breeds and winters in coastal suburbs (Baltosser and Scott 1996). While hummingbirds generally can adapt to bird feeders and ornamental plants, Anna's hummingbird probably outcompetes Costa's hummingbird in such places (Baltosser and Scott 1996). Other development- and human-related impacts that could affect this species include construction-related dust; noise and ground vibration; nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators; disturbance by humans and pet, stray, and feral cats; and the increased risk of fire, which affects native flowers by promoting non-native grasses and forbs, and destroys nesting trees that are not fire resistant. Areas of increased moisture along the open space–urban interface may attract Argentine ants, which prey on nestlings.

Survey Results

Suitable upland and riparian habitat for the Costa's hummingbird is present throughout the Specific Plan, VCC, and Entrada planning areas. No focused surveys for the Costa's hummingbird have been conducted, but suitable upland and riparian habitat for this species has been surveyed during surveys for other bird species. Surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2007.

On site, this species has not been observed to nest; however, it occurs as a migrant and has the potential to breed in coastal scrub and chaparral on the hillsides within the Project area (Bloom Biological 2007A, 2008). The Costa's hummingbird has been observed over multiple years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River within riparian scrub and woodland habitat (Guthrie 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1998A, 1998B, 1999A, 1999B, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2005A, 2005B, 2006A, 2006C; Labinger *et al.* 1995, 1996, 1997B; Labinger and Greaves 1999A). Other observations have been made in the VCC planning area (Guthrie 1994A, 1995A, 1996A, 1999A, 2000E, 2001A, 2002A, 2003A, 2004B, 2005A, 2006C) and off site within the Castaic Junction area (Guthrie 1988, 1989, 1993A, 1994A, 1997A, 2000F, 2001A, 2002A, 2003A, 2004I, 2006C; Dudek and Associates 2006E). The primary survey limitation is that focused surveys have not been conducted for Costa's hummingbird and no specific observations were mapped.

Because the Costa's hummingbird has regularly been observed during surveys in both upland shrublands and riparian areas, it is expected to occur throughout suitable habitat in the Project area, including alluvial scrub, coastal scrub alliances and associations, chaparral (undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral), and riparian communities (alluvial scrub, big sagebrush scrub, Mexican elderberry, mulefat scrub, southern

coast live oak riparian forest, southern cottonwood–willow riparian, and southern willow scrub). A total of 7,106 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 136 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.9% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 62 acres would be directly temporarily impacted.

Costa's hummingbird is still a wide-ranging species and uses a variety of scrub, chaparral, and riparian habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 136 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 1,992 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 28.0% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

A relatively large amount and percentage of suitable habitat on site for Costa's hummingbird would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 28.0% of suitable habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,128 acres (29.9%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of Costa's hummingbird in the Project area, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Based on the results from past surveys, Costa's hummingbird is considered to be fairly common as a migrant in the Project area, but it also has the potential to breed on site in the coastal scrub and chaparral. Because these birds are highly mobile, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds, but foraging or nesting individuals may be displaced from suitable habitat. Implementation of the SCP would not directly impact this species. Costa's hummingbird also has the potential to breed on site, and vegetation clearing or grading activities associated with implementation of the RMDP occurring during the nesting season could result in the destruction of nests, eggs, or young; interfere with foraging and provisioning of young; or cause nest abandonment. These impacts would have a substantial adverse impact on this species (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent and temporary impacts to individuals, but over a much larger area. Construction and/or grading activities may occur during the nesting season and could result in the destruction of nests, eggs, or young; interfere with foraging and provisioning of young; or cause nest abandonment. These impacts would have a substantial adverse impact on this species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the breeding season would have the potential to affect Costa's hummingbirds in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination. Dust may degrade foraging habitat quality, noise and ground vibration could disrupt foraging and nesting activities, and nighttime illumination could induce physiological stress and increase predation by nocturnal predators. ,Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity, which may affect nesting behavior; and greater vulnerability to nocturnal predators as a result of nighttime lighting, as well as greater vulnerability to predation by pet, stray, and feral cats and other mesopredators within about 200 feet of the urban–open space edge. Attraction of Argentine ants to moist habitats, especially riparian areas, could result in predation on nestlings. These secondary impacts would permanently reduce Costa's hummingbird populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area (significance criteria 1 and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Costa's hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 116 acres (1.6%) of permanent loss and 66 acres of temporary loss;
- Alternative 4 – 119 acres (1.7%) of permanent loss and 58 acres of temporary loss;
- Alternative 5 – 129 acres (1.8%) of permanent loss and 71 acres of temporary loss;
- Alternative 6 – 102 acres (1.4%) of permanent loss and 67 acres of temporary loss; and
- Alternative 7 – 51 acres (0.7%) of permanent loss and 77 acres of temporary loss.

Compared to Alternative 2, which would result in 136 acres (1.9%) of permanent habitat loss and 62 acres of temporary impacts, the permanent loss of habitat under Alternative 5 would not be substantially different, Alternative 4 would be marginally less, Alternatives 3 and 6 would be somewhat less, and Alternative 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3, 4, 5, and 6 would not be substantially different and Alternative 7 would be marginally greater. The difference between permanent loss of habitat for Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7 that would result in substantially reduced permanent impacts to suitable habitat for Costa's hummingbird and relatively greater temporary impacts compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be less than or similar in magnitude to the overall loss of habitat under Alternative 2, impacts under Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Costa's hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,883 acres (26.5%) of permanent loss;
- Alternative 4 – 1,829 acres (25.7%) of permanent loss;
- Alternative 5 – 1,778 acres (25.0%) of permanent loss;

- Alternative 6 – 1,525 acres (21.5%) of permanent loss; and
- Alternative 7 – 1,354 acres (19.1%) of permanent loss.

Compared to Alternative 2, which would result in 1,992 acres (28.0%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for Costa's hummingbird compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar in magnitude to or somewhat less than the overall loss of habitat under Alternative 2, but still substantial, these impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Costa's hummingbird:

- Alternative 3 – 1,999 acres (28.1%) of permanent loss;
- Alternative 4 – 1,948 acres (27.4%) of permanent loss;
- Alternative 5 – 1,907 acres (26.8%) of permanent loss;
- Alternative 6 – 1,627 acres (22.9%) of permanent loss; and
- Alternative 7 – 1,405 acres (19.8%) of permanent loss.

Compared to Alternative 2, which would result in 2,128 acres (29.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, there would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would reduce impacts to suitable habitat for Costa's hummingbird compared to the other

alternatives. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for Costa's hummingbird occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to Costa's hummingbird individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Foraging individuals may be displaced from construction areas, and clearing or grading activities occurring during the nesting season could result in the destruction of nests, eggs, or young; interference with foraging and provisioning of young; or abandonment of nests (significance criterion 1). Impacts to individual Costa's hummingbirds occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity and increased predation by nocturnal predators; pet, stray, and feral cats; and Argentine ants; as described above for Alternative 2. These secondary impacts would permanently reduce Costa's hummingbird populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts would be significant, absent mitigation, for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to Costa's hummingbird: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Costa's hummingbird has been commonly observed on site. Nesting by this species has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas, but suitable nesting habitat is present and the species has been observed during the nesting season. For the purpose of this analysis, it is assumed that Costa's hummingbirds could nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from suitable foraging habitat by construction activities. Impacts to individuals also could occur if Costa's hummingbirds were to nest on site and active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young. Construction activities may also interfere with foraging and provisioning of young, and cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the Costa's hummingbird resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,405 acres (19.8%) under Alternative 7 to 2,128 acres (29.9%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area for foraging, and potentially nesting. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the Costa's hummingbird in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 3,861 acres of the suitable habitat for this species in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging, and potentially nesting, activities by the Costa's hummingbird could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate foraging areas and abandon nests, if breeding were to occur, due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include increased human activity; lighting; and predation by pet, stray, and feral cats and Argentine ants. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management

of 3,861 acres of suitable habitat in the River Corridor, High Country SMA, and Salt Creek area will provide Costa's hummingbirds with relatively undisturbed habitat for foraging and potentially nesting. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Costa's hummingbirds by allowing them to nest and forage without disturbance. Argentine ant monitoring and controls will be implemented.

The specific mitigation measures for the Costa's hummingbird are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-137 IMPACTS TO INDIVIDUALS – COSTA'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Costa's hummingbird individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Costa's hummingbird individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Costa's hummingbirds would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-138 LOSS OF HABITAT – COSTA'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for Costa's hummingbird through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and

enhance approximately 381 acres of suitable habitat for Costa's hummingbird. The High Country SMA will preserve and enhance approximately 2,701 acres of suitable habitat for Costa's hummingbird.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate the loss of habitat for Costa's hummingbird through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes 778 acres of suitable habitat for the Costa’s hummingbird.

BIO-20 states that approximately 1,900 acres of coastal scrub that provides habitat for Costa’s hummingbird shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any

burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Implementation of BIO-19, BIO-20, and BIO-21 will minimize and mitigate impacts to Costa's hummingbird by preserving and restoring a large amount of suitable habitat in three interconnected preserved open space areas: the High Country SMA, Salt Creek area, and River Corridor SMA. Implementation of BIO-1 through BIO-16 will ensure that through restoration activities, riparian areas remain high-quality suitable habitat for Costa's hummingbird.

BIO-55 requires that maps of suitable riparian habitat be updated for special-status avian species, and the creation or enhancement of habitat be similar to the habitat removed.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the Costa's hummingbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-139 SECONDARY IMPACTS – COSTA'S HUMMINGBIRD

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects on Costa's hummingbird associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as abandonment of nests due to human activity and greater vulnerability to nocturnal predators as a result of nighttime lighting. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above and that generally refer to habitat protection, restoration and enhancement, and management, will be implemented to mitigate long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed

to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-20, SP-4.6-34, and SP-4.6-35 require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Costa's hummingbird, including short-term, construction-related dust, noise, ground vibration, and increased human activity; and long-term effects, such as increased human activity and greater vulnerability to predation by pet, stray, and feral cats and Argentine ants.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise by identifying nest sites and providing for buffers between nests and construction activities.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to Costa's hummingbird by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Costa's hummingbird would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

RUFOUS HUMMINGBIRD (NESTING) (BCC, CALIFORNIA SPECIAL ANIMAL)

Life History

The rufous hummingbird (*Selasphorus rufus*) historically has occurred in western North America and Mexico. Its breeding range extends from coastal southeast Alaska inland to the eastern foothills of the Rocky Mountains in Alberta and British Columbia, Canada, and south to extreme northern California and parts of Idaho and Montana. Its wintering range extends south from southern California through most of Mexico and the coastal regions of the Gulf Coast states. Rufous hummingbirds occurring between the breeding and wintering range are migrants.

The status and distribution of the rufous hummingbird in California is uncertain because of potential confusion with Allen's hummingbird (*Selasphorus sasin*) (Small 1994). However, the extreme northwestern coastal region of the state (Trinity and Humboldt counties) is the southern limit of its breeding range and southern California is the northern extent of its wintering range (McCaskie *et al.* 1979, 1988; Healy and Calder 2006; Zeiner *et al.* 1990A). In northern California, this species may also breed east into the foothills and slopes of the northern and east-central Sierra Nevada. The rufous hummingbird travels through the lowlands and foothills in California between February and early May on its way north to its breeding grounds. Some individuals may remain in southern California as uncommon summer residents (Grinnell and Miller 1944; Zeiner *et al.* 1990A). In the fall, southbound individuals may return through California *via* the Trinity Alps, Cascades, Sierras, and southern deserts, although many return south through the Rocky Mountains on the other side of the Great Basin Desert (Healy and Calder 2006; Zeiner *et al.* 1990A). During migration through the mountains, rufous hummingbirds have been documented between 1,700 and 2,400 meters (5,577 to 7,874 feet) AMSL in elevation. The rufous hummingbird is also a rare migrant on the Channel Islands and the Farallon Islands (Zeiner *et al.* 1990A).

Recently, increasing observations of this species have been made in late fall or winter in the southeast United States (North Carolina, Arkansas, Louisiana, and Florida) and even in several northeastern states. It is likely that artificial hummingbird feeders in these areas attract wintering individuals and contribute significantly to their survival, detectability, regularity of occurrence, and annual returns. Before feeders were so common and widespread, most rufous hummingbirds wandering east probably died in the fall (Healy and Calder 2006).

The rufous hummingbird uses a variety of habitats that provide nectar-producing flowers. In its breeding range, the species uses open expanses as well as coniferous forests, deciduous woods, riparian thickets, swamps, meadows, agricultural areas, parks, and residential areas (Healy and Calder 2006). In areas of Mexico where the rufous hummingbird winters, it has been documented in oak forests with interspersed pine and junipers, shrubby habitats, and in openings in woodlands and forests (Healy and Calder 2006). In California, rufous hummingbirds have been documented in high montane meadows and valley foothill hardwood, valley foothill

hardwood–conifer, riparian, and chaparral habitats (Zeiner *et al.* 1990A). During spring and fall migration, rufous hummingbirds have also been documented in a variety of habitats, including montane meadows and disturbed areas that contain suitable nectar sources for foraging (Healy and Calder 2006). The species also uses forested and brushy secondary succession communities created after fires and logging (Bloom Biological 2007A).

The rufous hummingbird breeds from May to early July, typically nesting in the lower branches of conifers, including spruces, pines, firs, hemlocks, and cedars. The species has also been documented nesting in hardwoods or shrubs (Healy and Calder 2006).

Significant population declines of the rufous hummingbird have been documented, varying from 0.8% to 2.3% each year between 1980 and 2004 in British Columbia, Oregon, and Washington (USGS 2007). If these declines are real, however, there is no obvious cause for them, because secondary succession after disturbances such as logging, fires, and road construction should lead to an increase in nectar sources from flowering forbs and shrubs (Healy and Calder 2006). The current global population of rufous hummingbirds is approximately 6.5 million (Healy and Calder 2006), a figure that does not approach thresholds for serious population decline.

The greatest threat to this species is likely unseasonable cold that affects nectar sources and kills insects (Zeiner *et al.* 1990A). The species is being documented more and more often outside its former wintering range (Hill *et al.* 1998), and it is possible that feeders may elevate populations above natural levels, at least locally. Other development- and human-related impacts that could affect this species include construction-related dust; noise and ground vibration; nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators; and disturbance by humans and pet, stray, and feral cats.

Survey Results

The Project area provides suitable foraging habitat for migrant rufous hummingbirds. The rufous hummingbird does not nest within the Project region. Migrant rufous hummingbirds have been occasionally observed within and near the Project area in several different years from 1995 to 2007. Three rufous hummingbirds were observed in April 1998 west of the Project area along the Santa Clara River between the Ventura County line and the western limit of the Las Brisas Ranch (Guthrie 1998A). Three rufous hummingbirds were observed in early April of 1999 north of Route 126 in what is now the Homestead West area (Guthrie 1999B). One individual was observed in late March 2004 within a study area including Potrero Valley, Oak Valley, Long Canyon, and the Onion Fields (the exact location was not recorded) (Guthrie 2004D). Another individual was observed in early April of 2004 in the southern half of the Legacy Village area (Guthrie 2004C), which is adjacent to the Project area just south of Mission Village and east of Potrero Village. *Selasphorus* hummingbirds that were either rufous or Allen's hummingbirds were observed in other years along the Santa Clara River within and adjacent to the Specific Plan area (Guthrie 2002A, 2002C; Bloom Biological 2007A, 2008). According to Bloom Biological,

Inc., individuals of both species undoubtedly use the Project area during migration (Bloom Biological 2007A). Most observations of unidentified (to species level) *Selasphorus* hummingbirds were made in March or April and were probably migrants of one or both species. Individuals observed in June or July (Guthrie 2002A) could have been resident Allen's hummingbirds or migrant rufous hummingbirds. Overall, the rufous hummingbird is considered a fairly uncommon transitory migrant in the Project area and does not nest on site.

Suitable foraging habitat for migrant rufous hummingbirds in the Project area includes shrublands (coastal scrub alliances and associations, undifferentiated chaparral scrubs, chamise chaparral, and scrub oak chaparral), oak woodlands (coast live oak woodland, valley oak woodland, mixed oak woodland and forest), valley oak/grass, river wash, and riparian scrubs, woodlands, and forests (big sagebrush scrub, big sagebrush–California buckwheat, Mexican elderberry, mulefat scrub, southern coast live oak riparian forest, southern cottonwood–willow riparian, and southern willow scrub). A total of 8,769 acres of suitable foraging habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 165 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.9% of suitable habitat on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 101 acres would be temporarily impacted.

The rufous hummingbird is still a wide-ranging species and uses a variety of scrub, chaparral, riparian, and woodland habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 165 acres of habitat and

temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,023 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 23.1% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

The rufous hummingbird is still a wide-ranging species and is a fairly uncommon transitory migrant in the Project area. The infrequent observations of migrating individuals on site suggest that it is not dependent on the Project area for migration. Furthermore, this species uses a variety of scrub, chaparral, riparian and woodland habitats and at least 5,350 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would remain as protected open space after build-out of the area. Therefore, this permanent loss of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,188 acres (25.0%).

Because the rufous hummingbird is still a wide-ranging species and is a fairly uncommon transitory migrant in the Project area, this combined loss of habitat would not have a substantial adverse effect on this species; have the potential to substantially reduce the

habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Rufous hummingbirds are highly mobile; therefore, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds migrating through the Project area. Migrants, however, may be displaced from foraging areas during construction, but there would be substantial alternative habitat available on site. Vegetation clearing and grading would not result in destruction of young or eggs of this species because it is not expected to nest on site. Implementation of the SCP also would not directly impact this species. Construction and grading activities related to implementation of the RMDP would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to rufous hummingbird individuals is similar to that described above for direct permanent and temporary impacts. Injury or mortality of migrating individuals is unlikely to occur, and this species is not expected to nest on site. Migrants, however, may be displaced from foraging areas during construction, but there would be substantial alternative habitat available on site. Therefore, build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be short term, and potential short-term secondary impacts, such as fugitive dust, ground vibration, noise, nighttime illumination, and increased human activity, would affect a small proportion of rufous hummingbirds migrating through the Project area.

Similarly, potential long-term development-related secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas, such as nighttime illumination, noise, increased human activity, and predation by pet, stray, and feral cats and dogs and other mesopredators, would affect very few individuals migrating through the Project area. Further, there would be adequate habitat for migrants well away from development edges.

These potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; cause the species population to drop below self-sustaining levels on site or rangewide; interfere with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the rufous hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 143 acres (1.6%) of permanent loss and 109 acres of temporary loss;
- Alternative 4 – 146 acres (1.7%) of permanent loss and 96 acres of temporary loss;
- Alternative 5 – 158 acres (1.8%) of permanent loss and 117 acres of temporary loss;

- Alternative 6 – 132 acres (1.5%) of permanent loss and 109 acres of temporary loss; and
- Alternative 7 – 60 acres (0.7%) of permanent loss and 121 acres of temporary loss.

Compared to Alternative 2, which would result in 165 acres (1.9%) of permanent habitat loss and 101 acres of temporary impacts, the permanent loss of habitat would not be substantially different under Alternative 5 and would be marginally reduced under Alternative 4, somewhat reduced under Alternatives 3 and 6, and substantially reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternatives 3 through 6, and would be marginally greater under Alternative 7. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes to the Project footprint under Alternative 7, which would result in substantially fewer permanent impacts and marginally greater temporary impacts to suitable habitat for the rufous hummingbird under Alternative 7 compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, the impacts under Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the rufous hummingbird (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,890 acres (21.6%) of permanent loss;
- Alternative 4 – 1,821 acres (20.8%) of permanent loss;
- Alternative 5 – 1,768 acres (20.2%) of permanent loss;
- Alternative 6 – 1,489 acres (17.0%) of permanent loss; and
- Alternative 7 – 1,352 acres (15.4%) of permanent loss.

Compared to Alternative 2, which would result in 2,023 acres (23.1%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 6 and 7 would impact substantially fewer acres of suitable habitat for rufous hummingbird compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than the overall loss of habitat under Alternative 2, the impacts under Alternatives 3 through 7 would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the rufous hummingbird:

- Alternative 3 – 2,032 acres (23.2%) of permanent loss;
- Alternative 4 – 1,966 acres (22.4%) of permanent loss;
- Alternative 5 – 1,926 acres (22.0%) of permanent loss;
- Alternative 6 – 1,622 acres (18.5%) of permanent loss; and
- Alternative 7 – 1,412 acres (16.1%) of permanent loss.

Compared to Alternative 2, which would result in 2,188 acres (25.0%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, with Alternatives 6 and 7 having the fewest impacts compared to the other alternatives. Because the combined direct and indirect permanent loss of suitable habitat for the rufous hummingbird occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than the habitat loss under Alternative 2, the impacts under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for impacts to rufous hummingbird individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Injury or mortality of migrating individuals is unlikely to occur, and this species is not expected to nest on site. Foraging individuals, however, may be displaced during construction, but substantial alternative foraging habitat would be available. Therefore, construction and/or grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or

rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species. Direct and indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Potential short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Short-term impacts include construction-related dust, noise, vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than during implementation of the RMDP and the SCP because of the much larger area of impact associated with build-out of the Specific Plan, VCC, and Entrada planning areas. Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity and increased predation, as described above for Alternative 2. Because the rufous hummingbird is a migrant and there would be adequate suitable habitat well away from development edges, these potential short-term and long-term secondary impacts would not have a substantial adverse effect on the species or contribute to the reduction of its range and distribution. The secondary impacts under Alternatives 3 through 7 would be adverse but not significant.

Mitigation Strategy and Summary

No mitigation is required for impacts to the rufous hummingbird because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 5,350 acres of suitable habitat in the High Country SMA, Salt Creek area, and River Corridor SMA. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because migrating individuals will have access to habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects such as increased human activity; pet, stray, and feral cats and dogs; and lighting will also be mitigated through a variety of measures.

SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW (WL)

Life History

The rufous-crowned sparrow (*Aimophila ruficeps*) is a resident of the southwest region of the United States, with a range that extends east from California to Arkansas and south through Mexico and discontinuously to southern Baja California. East of the Rocky Mountains, the rufous-crowned sparrow winters from central and southern Oklahoma to northern Texas and south into Mexico (Terres 1980; NatureServe Explorer 2007).

The southern California rufous-crowned sparrow (*A. r. canescens*), also called the ashy rufous-crowned sparrow (Collins 1999B), is one of three Pacific coast subspecies. The current distribution of the southern California rufous-crowned sparrow is restricted to a narrow belt of semiarid coastal scrub and sparse chaparral from Santa Barbara south to the northwestern corner of Baja California (Todd 1922; Grinnell 1926; Grinnell and Miller 1944; Bent 1968; Zeiner *et al.* 1990A; Unitt 1984; Collins 1999A). The southern California rufous-crowned sparrow is considered a resident throughout its range. No true migratory movements have been recorded, though limited movements to lower elevations in some areas have been reported during especially severe winters (Collins 1999B).

The southern California rufous-crowned sparrow occupies moderate to steep hillsides that are rocky, grassy, or covered by coastal scrub or chaparral. It is a secretive species, seeking cover in shrubs, rocks, grass, and forb patches. Highly suitable habitat consists of sparse, low brush or grass that is interspersed with boulders and outcrops (Willet 1912, 1933; Grinnell 1915, 1926; Grinnell and Miller 1944; Bent 1968; Pulliam and Mills 1977; Phillips *et al.* 1983; Unitt 1984; Ehrlich *et al.* 1988; Root 1988; Terres 1980; Verner and Boss 1980). The southern California rufous-crowned sparrow often occurs near the edges of denser scrub and chaparral associations, but usually does not occur within these associations. Some observers have noted a preference for south- or west-facing slopes and a preference for coastal sagebrush over other vegetation types (Collins 1999B; Barlow 1902; Grinnell 1915; Grinnell and Miller 1944; Bent 1968; Root 1988). The southern California rufous-crowned sparrow often thrives in open expanses that have recently been burned (Collins 1999B). Its elevation range in California (Collins 1999B) is between 60 and 1,400 meters (197 and 4,593 feet) AMSL.

Physical and vegetative characteristics of habitat used by the southern California rufous-crowned sparrow were quantified by Collins (1999A). Occupied sites generally are west-, south-, and east-facing slopes vegetated with low, fairly open cover of shrubs and grass. Most of the occupied sites (89%) were on slopes of 15° to 60° and almost 50% of the sites were on fairly steep slopes between 30° and 45°. Rock outcrops were present on 61% of the occupied sites. Shrub cover averaged 50% and grass cover averaged 29% on occupied sites. Shrub height was generally low in this study, averaging 0.8 meter (2.6 feet). The dominant shrubs associated with

the habitats used by this species included coastal sagebrush, purple sage, black sage, California encelia, coyote brush, mock heather, deer weed, giant rye, and buckwheat.

Although details of the diet of the southern California rufous-crowned sparrow are poorly known, like most sparrows, the diet of this species appears to be a mixture of small invertebrates and seeds of grasses and forbs. The species forages primarily on the ground, but also low in bushes and in the litter beneath them.

Southern California rufous-crowned sparrows are not gregarious and only flock as family groups of no greater than five or six (Bent 1968; Wolf 1977). Territorial males are closely spaced in coastal scrub and more widely spaced in chaparral that is regenerating after a fire. Average territory size is estimated to be about 1.5 hectares (3.7 acres) in chaparral (Cody 1974) and 0.8 hectare (2.0 acres) in southern California coastal scrub (Bent 1968).

Females build nests directly on the ground, concealing them at the base of a bunchgrass clump or shrub (Terres 1980; Verner and Boss 1980; Ellison 1998). Less often, nests are located in shrubs or under rock overhangs (Collins 1999A).

Habitat loss, degradation, and fragmentation are the main threats to the southern California rufous-crowned sparrow (Collins 1999B; Thorngate and Parsons 2005). The conversion of coastal scrub and other suitable open scrub habitats to agriculture and urban development has reduced the available habitat for this resident species (Bent 1968; Unitt 1984; Collins 1999B). Fragmentation of remaining habitat is also a concern. In one study in San Diego County, southern California rufous-crowned sparrows were more abundant in larger patches of suitable habitat than in smaller, more fragmented patches (Bolger, Scott, *et al.* 1997). Fire suppression has probably also contributed to the decline of this species by promoting dense, uniform stands of scrub and chaparral that are not suitable for this species (Collins 1999B; Thorngate and Parsons 2005). Rufous-crowned sparrows may benefit from moderate grazing and trampling by cattle, which opens up denser shrub vegetation (Jones 1998), but intense grazing may cause available shrub cover to become too sparse. Domestic cats may be a significant predator along urban edges. Female rufous-crowned sparrows have been known to abandon nests temporarily if disturbed repeatedly during nest-building, egg-laying, or incubation (Collins 1999B). Several other human- or development-related factors may affect rufous-crowned sparrows. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Additional potential long-term effects related to development include increased human activity, which may disturb nesting; pesticides, which may contaminate vegetative food sources (seeds), cause loss of prey, or cause secondary poisoning; lighting; and Argentine ants, which may occur in moist edge areas and prey on nestlings.

Survey Results

Numerous surveys for upland bird species have been conducted throughout the Project area and in nearby areas between 1995 and 2008. Although focused surveys for the southern California rufous-crowned sparrow were not conducted, it has been observed over multiple years during these surveys as a fairly common resident in the coastal scrub within the Project area during annual bird surveys. It has been observed foraging in uplands and near the Santa Clara River (Bloom Biological 2008; Guthrie 2000A, 2000B, 2001A, 2002C, 2004A, 2004D) and was observed nesting in 2007 (Bloom Biological 2007A). Suitable nesting and foraging habitat for this species is present throughout the Project area. Based on the numerous and regular observations of this species in past bird surveys, the southern California rufous-crowned sparrow is considered to nest and forage throughout the Project area in California sagebrush scrubs (California sagebrush scrub and associations, California sagebrush–black sage, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral) and big sagebrush–California buckwheat. A total of 4,327 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 30 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 0.7% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat). A total of 2.3 acres would be temporarily impacted.

The southern California rufous-crowned sparrow is still a wide-ranging species and fairly common in coastal scrub, including in scrub habitats in the Project area. The construction of RMDP facilities would be phased over a long period of time and approximately 1,980 acres of suitable habitat in the High Country SMA, Salt Creek area, and River Corridor SMA would be available for this species at any given time.

Therefore, the permanent loss of 30 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 1,487 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 34.4% of these habitats on site (**Figure 4.5-102**, Alternative 2 Impacts to Scrub and Chaparral Wildlife Habitat).

Although the southern California rufous-crowned sparrow is still a wide-ranging species and common on site, the build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 34.4% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). This indirect permanent impact (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,517 acres (35.1%). Although the southern California rufous-crowned sparrow is still a wide-ranging species and common on site, implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on the distribution of this species on site by eliminating it from approximately 35.1% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The southern California rufous-crowned sparrow is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality individual adult birds. However, birds would be physically displaced from occupied habitat. Implementation of the SCP would not directly impact this species. Vegetation clearing or grading during the nesting season could result in destruction of nests, eggs, or young, cause nest abandonment, or alter foraging behavior and provisioning of young, which could result in reduced survivorship and reduced reproductive success. Because of the special status of this bird species and the potential for injury or mortality of individual birds, and specifically destruction of nest, eggs, or young, interference with foraging and provisioning of young, or nest abandonment, such impacts would have a substantial direct adverse effect on this species; (significance criterion 1). Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals, but over a much larger area. Construction and/or grading activities may occur during the nesting season and could result in the destruction of nest, eggs, or young, interfere with foraging and provisioning of young, or cause nest abandonment. These impacts would have a substantial adverse impact on this species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas occurring during the breeding season would have the potential to affect southern California rufous-crowned sparrow in areas adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime lighting. Dust could degrade habitat quality, noise and ground vibration could affect nesting and foraging behavior, and nighttime lighting could induce physiological stress and increase predation by nocturnal predators. Potential long-term development-related secondary impacts include habitat fragmentation, habitat degradation from frequent wildfires, increased human activity, nighttime illumination, potential harassment by humans and pet, stray, and feral cats and dogs and other mesopredators, loss of food sources and secondary poisoning from pesticides, and predation of nestlings by Argentine ants along the open space-development interface.

These short-term and long-term secondary impacts would permanently reduce the number of southern California rufous-crowned sparrows that may occur along the urban–open space edge, interfere with the movement of the species between habitat areas due to fragmentation, and contribute to the reduction of the range and distribution of the southern California rufous-crowned sparrow in the Project area (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for southern California rufous-crowned sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 28 acres (0.6%) of permanent loss and 4.5 acres of temporary loss;
- Alternative 4 – 28 acres (0.6%) of permanent loss and 2.0 acres of temporary loss;
- Alternative 5 – 32 acres (0.7%) of permanent loss and 6.0 acres of temporary loss;
- Alternative 6 – 28 acres (0.6%) of permanent loss and 7.6 acres of temporary loss; and
- Alternative 7 – 19 acres (0.4%) of permanent loss and 13 acres of temporary loss.

Compared to Alternative 2, which would result in 30 acres (0.7%) of permanent habitat loss and 2.3 acres of temporary impacts, the permanent loss of habitat would not be substantially different under Alternatives 3 through 6, and would be somewhat reduced under Alternative 7. Compared to Alternative 2, the temporary loss of habitat would not be substantially different under Alternatives 3 through 6, and would be marginally higher under Alternative 7. The difference for Alternative 7 compared to the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries as well as other reductions to the Project footprint under Alternative 7 that would result in fewer permanent impacts and more temporary impacts to suitable habitat for the southern California rufous-crowned sparrow compared to the other alternatives.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude to somewhat reduced compared to the loss of habitat under Alternative 2, and temporary impacts would be similar in magnitude under Alternatives 3 through 6 and would be marginally higher

under Alternative 7, the impacts would be adverse but not significant for Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for southern California rufous-crowned sparrow (**Figures 4.5-103** through **4.5-107**, Alternatives 3 through 7 Impacts to Scrub and Chaparral Wildlife Habitat):

- Alternative 3 – 1,408 acres (32.5%) of permanent loss;
- Alternative 4 – 1,368 acres (31.6%) of permanent loss;
- Alternative 5 – 1,316 acres (30.4%) of permanent loss;
- Alternative 6 – 1,088 acres (25.1%) of permanent loss; and
- Alternative 7 – 1,007 acres (23.3%) of permanent loss.

Compared to Alternative 2, which would result in 1,487 acres (34.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for southern California rufous-crowned sparrow compared to the other alternatives.

Although habitat loss under Alternatives 3 through 7 would be less than Alternative 2, a relatively large amount and percentage of suitable habitat for the southern California rufous-crowned sparrow would still be permanently lost as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under these alternatives, ranging from 23.3% under Alternative 7 to 32.5% under Alternative 3. This permanent loss of habitat would have a substantial adverse effect on a special-status species and substantially reduce its numbers and restrict its range on site. The indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and

Entrada planning areas would result in the following impacts to suitable habitat for southern California rufous-crowned sparrow:

- Alternative 3 – 1,436 acres (33.2%) of permanent loss;
- Alternative 4 – 1,396 acres (32.3%) of permanent loss;
- Alternative 5 – 1,349 acres (31.2%) of permanent loss;
- Alternative 6 – 1,116 acres (25.8%) of permanent loss; and
- Alternative 7 – 1,026 acres (23.7%) of permanent loss.

Compared to Alternative 2, which would result in 1,517 acres (35.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons cited above for indirect permanent impacts. This permanent loss of habitat would have a substantial adverse effect on a special-status species and substantially reduce its numbers and restrict its range on site. The combined direct and indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential impacts to southern California rufous-crowned sparrow individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Individuals could be displaced from occupied habitat by construction activities, and construction occurring during the nesting season could result in the destruction of nest, eggs, or young, interfere with foraging and provisioning of young, or cause nest abandonment. These impacts to individual southern California rufous-crowned sparrows occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Short-term impacts include construction-related dust, noise, ground vibration, and nighttime illumination, that could cause habitat degradation, disrupt nesting and foraging activities, and abandonment of nests. Potential long-term secondary impacts include habitat

fragmentation, habitat degradation due to wildfire, increased human activity, nighttime illumination, increased predation, and secondary poisoning, as described above for Alternative 2. These secondary impacts would permanently reduce southern California rufous-crowned sparrow populations along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to southern California rufous-crowned sparrow: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and habitat outside the Project footprint.

The southern California rufous-crowned sparrow is a relatively common breeding resident on site in habitat that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from occupied habitat by construction activities. Impacts to individuals also could occur if active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young, or interfere with foraging or provisioning of young. Construction activities may also cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable habitat for the southern California rufous-crowned sparrow resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,026 acres (23.7%) under Alternative 7 to 1,517 acres (35.1%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the southern California rufous-crowned sparrow in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 1,936 acres of suitable habitat for the southern California rufous-crowned sparrow in the High Country SMA and the Salt Creek area, with an additional 51 acres in the River Corridor SMA (**Figure 4.5-3**).

With regard to secondary effects, foraging and nesting activities by the southern California rufous-crowned sparrow could be adversely affected in the short term by increased human

activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate territories and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests, are present in the disturbance zone or within 300 feet and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation; wildfire; increased human activity; lighting; pesticides, which may cause secondary poisoning and loss of food resources; harassment by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants that may prey on nestlings. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 1,936 acres of suitable habitat in the High Country SMA and Salt Creek area will provide southern California rufous-crowned sparrows with relatively undisturbed habitat. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect southern California rufous-crowned sparrows by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning and loss of food sources.

The specific mitigation measures for the southern California rufous-crowned sparrow are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-140 IMPACTS TO INDIVIDUALS – SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate impacts to southern California rufous-crowned sparrow individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to southern California rufous-crowned sparrow individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to California rufous-crowned sparrow individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-141 LOSS OF HABITAT – SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for southern California rufous-crowned sparrow through habitat protection, restoration and enhancement, and management.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The High Country SMA will protect and manage at least 1,307 acres of suitable habitat for southern California rufous-crowned sparrow.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measure to mitigate for the loss of habitat for southern California rufous-crowned sparrow through habitat protection, restoration and enhancement, and management.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area includes 629 acres of suitable habitat for the southern California rufous-crowned sparrow.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the southern California rufous-crowned sparrow would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-142 SECONDARY IMPACTS – SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as habitat fragmentation, increased human activity, inadvertent impacts to habitat during construction, and nighttime lighting.

SP-4.6-36 through SP-4.6-42, as described above, refer to habitat protection and management in the High Country SMA that will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

Several mitigation measures will control human activities in the High Country SMA. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-34 and SP-4.6-35 require that all grading perimeters within the High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to biological resources outside the grading area in the High Country SMA.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to southern California rufous-crowned sparrow, including short-term construction-related dust, noise, ground vibration and increased human activity as well as long-term habitat fragmentation, increased human activity, greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators, as well as Argentine ants, and loss of food sources and secondary poisoning from pesticide use.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-19 through BIO-21, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to southern California rufous-crowned sparrow by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the southern California rufous-crowned sparrow would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

CHIPPING SPARROW (NESTING) (CALIFORNIA SPECIAL ANIMAL)

Life History

The chipping sparrow (*Spizella passerina*) is a very common and widespread species that breeds from eastern Alaska through Canada, southward to the southern United States, and into Mexico and Central America. Its winter range extends into Mexico, Central America, and the southern tier of the United States (Middleton 1998). The chipping sparrow is a common migrant and summer visitor throughout most of California, excluding the Central Valley, southern deserts, and alpine areas. Some individuals move downslope to winter from the Central Valley to southern Mexico but it is unknown what portion of the breeding population remains in the state and what portion migrates farther south (Zeiner *et al.* 1990A). In southwestern California, the population tends to consist of year-round residents but the breeding populations may be replaced or augmented by a different wintering population (Zeiner *et al.* 1990A).

Chipping sparrows prefer open wooded habitats with a sparse or low herbaceous layer and few shrubs, if any (Zeiner *et al.* 1990A). Breeding habitats vary with geographic location, but chipping sparrows prefer open, grassy, coniferous forests, woodland glades or edge, prairie aspen groves, and river and lake shorelines (Johnson 1968; Stull 1968; Rising 1996). In coastal California and at lower elevations along foothills, the chipping sparrow is found in a variety of woodland types with grassy understory, including orchards, edges of oak woodlands, mixed evergreen (Douglas fir (*Pseudotsuga menziesii*) and redwood (*Sequoia sempervirens*)) forests, and less frequently in cypress (*Cupressus* spp.) and eucalyptus tree (*Eucalyptus* spp.) groves where these habitats border on gently sloping grasslands or open meadows (Middleton 1998). The species requires trees for nesting and singing and often forages in nearby herbaceous and open shrub habitats, including dry margins of wet meadows (Zeiner *et al.* 1990A). Fall and spring migration habitat includes open grassy areas, old weedy fields, and areas along hedgerows, but the chipping sparrow is also found in desert scrub, sagebrush scrub, and chaparral; around oases; on mountain ridges; and in suburban backyards (Jewett *et al*. 1953; Stull 1968; Alcorn 1988; Veit and Petersen 1993; Small 1994).

The chipping sparrow is adaptable to human developments and appears to have benefited from human occupation of North America (Middleton 1998). The chipping sparrow now appears to be more common and abundant in suburban areas and around rural residences, orchards, and farms than in undisturbed habitats (Middleton 1998; Reynolds and Knapton 1984).

The chipping sparrow feeds mostly on insects and other invertebrates during the breeding season and feeds mostly on grass and forb seeds for the remainder of the year (Martin *et al.* 1961). They forage primarily on the ground or in low vegetation (Forbush 1913; Stull 1968; Oberholser 1974; Allaire and Fisher 1975).

Chipping sparrow territory sizes vary individually and seasonally, but range from approximately 0.2 to 0.4 hectare (0.5 to 1.0 acre) (Bradley 1940; Walkinshaw 1944; Sutton 1960; Stull 1968; Keller 1979; Albrecht and Oring 1995).

The breeding season usually begins in April or May, but can begin as early as late March (Zeiner *et al.* 1990A; Middleton 1998). In California, the species usually nests in conifers, but deciduous trees or shrubs are also used (Grinnell and Miller 1944). Nests are rarely more than 12 meters (40 feet) above the ground, or, rarely, are on the ground (Bent 1968), and are usually concealed in dense foliage near branch ends. Chipping sparrows have a clutch size of three to five eggs, and young fledge about nine to 10 days after hatching (Middleton 1998). The species typically rear one brood annually, although a second brood may occur, depending on the early success of the first nest (Middleton 1998). After young reach independence, they collect into flocks varying from about five to 15 birds. These small flocks are common during late summer and early autumn as they forage in open weedy spaces.

California populations of the chipping sparrow may be declining, although other studies and anecdotal evidence do not necessarily support observation, and regional declines in the western United States appear to be offset by increases in the east and Midwest (Middleton 1998). This possible decline may be due to a reversion of land back to forest or due to more intensive farming practices (Middleton 1998). Also, forest-clearing and habitat fragmentation may have increased this species' exposure to cowbird parasitism (DeSante and George 1994; Rising 1996). Outside California, the chipping sparrow is one of the most common hosts of brown-headed cowbirds. Within California, the Sierra Nevada population appears to be an infrequent host, and no information is available for other California populations (Zeiner *et al.* 1990A). Predation is also major cause of nest failure; however, the impact varies with season and geographic location, and nothing is known about the nest failures due to predation for the California population (Middleton 1998). Additionally, the competition with urban-related house sparrows and house finches may have a negative affect on the chipping sparrow population, and domestic cats are likely predators in nestlings and adults (Walkinshaw 1952; Stull 1968; Veit and Petersen 1993). Other development- and human-related impacts that could affect this species include construction-related dust; noise and ground vibration; and nighttime lighting, which may induce physiological stress and increase predation by nocturnal predators. Pesticides may reduce prey and cause secondary poisoning and Argentine ants may prey on nestlings.

Survey Results

Riparian bird surveys have been conducted for multiple years between 1988 and 2008 along the Santa Clara River in the Project area in suitable habitat for the chipping sparrow, generally from the I-5 Bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B,

2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C; Labinger and Greaves 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 Bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 and 2008 (Bloom Biological 2007A, 2008).

Upland bird surveys also have been conducted throughout the Project area and in nearby areas between 1995 and 2008 by a variety of consulting firms, covering Landmark Village, Mission Village, and Homestead East and West areas as well as Potrero, Long, and Chiquito canyons and the upland habitats along the Santa Clara River (Bloom Biological 2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Upland surveys have also been conducted in the VCC (Dudek and Associates 2006D; Guthrie 2004B) and Entrada planning areas (Dudek and Associates 2006E; Guthrie 2004G). Areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project area on the south and east (Guthrie 2004C), the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I), the Riverpark site (now referred to as River Village) upstream of the Specific Plan area (Compliance Biology 2003), and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

The chipping sparrow has been observed as a common migrant in the Project area; for example, one to 12 individuals were observed near edges of agricultural fields most days in early March 2007 (Bloom Biological 2007A). It has been observed over multiple years between 1988 and 2007 in riparian scrub and woodland habitat in the Santa Clara River, as well as from the Ventura County line to the western limit of the Las Brisas Ranch (Guthrie 1994B, 1997B), near Grapevine Mesa (Guthrie 2000B) and Homestead Canyon (Guthrie 2004A), and in the VCC planning area (Guthrie 1991A, 1991B, 1992C, 1993A, 1999A). The Project area is within this species' year-round range, so even though the observations occurred in early spring and no observations occurred later in the breeding season, the chipping sparrow could occur on site as a breeding bird and is analyzed as such.

Suitable habitats for the chipping sparrow on site include coast live oak woodland, mixed oak woodland, valley oak woodland, valley oak/grass, riparian scrub, and southern willow scrub. A total of 1,490 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 12 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 0.8% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 6.3 acres would be temporarily impacted.

The chipping sparrow is still a wide-ranging species and uses a variety of riparian scrub and woodland habitats. It is a commonly observed migrant on site and may nest in the Project area. The construction of RMDP facilities would be phased over a long period of time and more than 1,000 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 12 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 86 acres (5.8%) of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat**)**.

The chipping sparrow is still a common and wide-ranging species and uses a variety of riparian scrub and woodland habitats during migration and potentially for nesting. Following build-out, approximately 1,280 acres of woodland and riparian scrub habitats would be protected and managed in the River Corridor SMA, High Country SMA, and Salt Creek area. The loss 86 acres of habitat that would occur as a result of construction and/or grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 98 acres (6.6%). Because the chipping sparrow is a common and wide-ranging species and because approximately 1,280 acres of habitat for this species would remain after build-out, the combined direct and indirect impacts to 98 acres of suitable habitat would not have a substantial adverse effect on the distribution of the chipping sparrow in the Project area, and thus would not substantially reduce its numbers and restrict its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The chipping sparrow is a relatively mobile species, and it is unlikely that Project-related construction activities would result in injury or mortality of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. Also, implementation of the RMDP could result in mortality of young and/or eggs due to destruction of nests if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The chipping sparrow is a relatively mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. Also, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Indirect, permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. Although construction would be of a short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of nesting and foraging activities, potentially affecting reproductive success.

Potential long-term development-related secondary impacts related to RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas include increased human activity; nighttime illumination; pesticides which may reduce prey and cause secondary poisoning; greater vulnerability to predation by pet, stray, and feral cats and dogs, and other mesopredators; Argentine ants which may prey on nestlings; and habitat fragmentation-related edge effects that may increase the exposure of chipping sparrows to cowbird parasitism. Urban-related noise is not considered to be a potential significant effect on this species because of its apparent adaptability to urban settings. The aforementioned secondary impacts would permanently reduce chipping sparrow populations and contribute to the reduction of the range and distribution of the chipping sparrow in the Project area (significance criteria 1 and 7).

Short-term and long-term secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the chipping sparrow (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 11 acres (0.8%) of permanent loss and 6.4 acres of temporary loss;
- Alternative 4 – 11 acres (0.7%) of permanent loss and 6.2 acres of temporary loss;
- Alternative 5 – 15 acres (1.0%) of permanent loss and 6.6 acres of temporary loss;
- Alternative 6 – 20 acres (1.4%) of permanent loss and 6.5 acres of temporary loss; and
- Alternative 7 – 5.6 acres (0.4%) of permanent loss and 15 acres of temporary loss.

Compared to Alternative 2, which would result in 12 acres (0.8%) of permanent habitat loss and 6.3 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would not be substantially different, would be marginally to somewhat more under Alternatives 5 and 6, and would be somewhat less under Alternative 7. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be the same or not substantially different, and Alternative 7 would be substantially more. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in fewer permanent impacts and greater temporary impacts.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be small and generally similar to or less than Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the chipping sparrow (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 67 acres (4.5%) of permanent loss;
- Alternative 4 – 66 acres (4.5%) of permanent loss;

- Alternative 5 – 66 acres (4.5%) of permanent loss;
- Alternative 6 – 41 acres (2.8%) of permanent loss; and
- Alternative 7 – 44 acres (3.0%) of permanent loss.

Compared to Alternative 2, which would result in 86 acres (5.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, with Alternatives 3, 4, and 5 having moderate reductions and Alternatives 6 and 7 having more substantial reductions. Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be relatively small and less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the chipping sparrow:

- Alternative 3 – 78 acres (5.3%) of permanent loss;
- Alternative 4 – 77 acres (5.1%) of permanent loss;
- Alternative 5 – 82 acres (5.5%) of permanent loss;
- Alternative 6 – 61 acres (4.1%) of permanent loss; and
- Alternative 7 – 50 acres (3.4%) of permanent loss.

Compared to Alternative 2, which would result in 98 acres (6.6%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, with Alternatives 3, 4, and 5 having moderate reductions and Alternatives 6 and 7 having more substantial reductions. Because the combined direct and indirect permanent loss of habitat from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be relatively small and less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential impacts to chipping sparrow individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project

footprint under the different alternatives. Although adult birds would likely avoid injury or mortality, loss of young and/or eggs due to destruction of nests could occur, and provisioning of young could be disrupted, if construction/grading activities occurred during the nesting season of this species. Impacts to individual chipping sparrows occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term secondary impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than with implementation of the RMDP and the SCP because of the much larger area of impact. If these impacts occur during the nesting season, reproductive success could be affected

Potential long-term secondary impacts associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include habitat fragmentation-related edge effects, increased human activity, nighttime illumination, and increased predation, pesticides, Argentine ants, and cowbird parasitism, as described above for Alternative 2. These long-term secondary impacts would permanently reduce the chipping sparrow population along the urban–open space edge and contribute to the reduction of the range and distribution of this species in the Project area. Short-term and long-term secondary impacts would be significant, absent mitigation under Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to chipping sparrow: (1) impacts to individuals; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by chipping sparrow has not been documented for areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. However, suitable nesting habitat is present on site and the Project area is within this species' breeding range. Therefore it is assumed that chipping sparrow could nest on site. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts

to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

With regard to secondary effects, nesting and foraging activities by the chipping sparrow could be adversely affected in the short-term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may alter foraging and provisioning of young. Construction-generated dust may affect habitat quality and both insect prey and vegetative food sources (*e.g.*, berries and sap) for the chipping sparrow. Lighting may induce physiological stress and increase the risk of predation by nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation, which may increase cowbird nest parasitism; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; predation by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants which may prey on nestlings. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of approximately 1,261 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide chipping sparrows with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect chipping sparrows by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of prey. Controls on Argentine ants will help reduce impacts on young in nests. Cowbird trapping will be conducted as necessary.

The specific mitigation measures for the chipping sparrow are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-143 IMPACTS TO INDIVIDUALS – CHIPPING SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of chipping sparrow individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to chipping sparrow individuals

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to chipping sparrow individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-144 SECONDARY IMPACTS – CHIPPING SPARROW

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to mitigate for long-term secondary effects on chipping sparrow associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as habitat fragmentation, increased human activity, and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for chipping sparrow that will offset secondary impacts. Mitigation measures to avoid and minimize impacts to riparian/wetland habitats and inadvertent impacts to habitat outside disturbance zones during construction will also be implemented.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance approximately 14 acres of suitable riparian scrub habitat for chipping sparrow. The High Country SMA will preserve and enhance approximately867 acres of suitable habitat for chipping sparrow.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as

described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along the open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to chipping sparrow, including short-term construction-related dust, noise, and ground vibration; and long-term impacts such as habitat fragmentation and associated cowbird nest parasitism; Argentine ants; increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and pesticide use resulting in secondary poisoning and loss of prey.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to chipping sparrow by protecting habitat quality and by minimizing impacts on its insect prey and vegetative food resources. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 will improve long-term habitat quality for the chipping sparrow and include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to chipping sparrow by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the chipping sparrow would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

HERMIT WARBLER (NESTING) (CDFG TRUST RESOURCE)

Life History

The hermit warbler (*Dendroica occidentalis*) is locally common in coniferous forests. Based on available records, the hermit warbler breeds in southwestern Washington, south through the Sierra Nevada mountains, and into southern California and west-central Nevada. Non-breeding (migratory) populations can be found in Washington, Oregon, California, Colorado, Nevada, Arizona, New Mexico, and Texas (NatureServe 2007).

Hermit warblers occur in conifer and mixed forests, shrubland, chaparral, and conifer and mixed woodlands (NatureServe 2007). This species is habitat specific and nests on the upper, open branches of old growth Douglas-fir (*Pseudotsuga menziesii*) and pine (*Pinus* spp.) trees. In California, the hermit warbler has been observed nesting in mature ponderosa pine (*Pinus ponderosa*), montane hardwood conifer, mixed conifer, Douglas-fir, coast redwood (*Sequoia sempervirens*), and Jeffery pine (*P. jeffreyi*) (Zeiner *et al.* 1990A). Hermit warblers are most often found in the interior of large mature coniferous forests that are over 30 years old, and they are almost completely absent from stands under 20 years old (Seattle Audubon Society 2006).

Hermit warblers forage on small invertebrates such as small spiders, caterpillars, beetles, flies, wasps, stone flies, and true bugs (Pearson 1997) that they glean from foliage and twigs at height of five to 25 meters (16 to 82 feet) while hopping along or hovering. They can also fly out and catch aerial insects.

The breeding season of the hermit warbler in California occurs from April through July. The migrant breeding wave passes into breeding areas from April to May and out from August to September. Nesting occurs through late April and into early July. The female-built nests usually are in the cover of mature forests, though ground nesting does occur (Munson 1984). Clutch size is three to five per nest (Zeiner *et al.* 1990A), and nestlings are active outside the nest within 10 days of hatching (Seattle Audubon Society 2006).

In addition to direct loss of habitat, hermit warblers are vulnerable to several effects related to development. These birds require dense, old growth forests for foraging and breeding grounds. They abandon managed areas that eliminate forest canopy or fragment habitat. The hermit warbler is also vulnerable to brown-headed cowbird nest parasitism in areas where habitat fragmentation has increased edge habitats (NatureServe 2007). Several other human- or development-related factors may affect hermit warblers. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Additional potential long-term effects related to development include increased human activity, which may disturb nesting; domestic cats which may prey on adults; pesticides,

which may cause loss of prey or secondary poisoning; and lighting. Where this species nests in fragmented habitats, it is also vulnerable to brown-headed cowbird nest parasitism.

Survey Results

Bird surveys were conducted from 1988 through 2006 within the portion of the Santa Clara River and Castaic Creek in and adjacent to the Project boundary in areas of suitable habitat for the hermit warbler (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000A, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004A, 2004B, 2004C, 2004D, 2004E, 2004F, 2004G, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C; Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A). The surveys primarily were conducted in the riparian areas in the Santa Clara River corridor and on both sides of the River. Surveys were also conducted in the Project vicinity by Bloom Biological, Inc. from February through June, 2007, including about 25 miles of the Santa Clara River and its major tributaries in and around the Project site. The survey covered all habitats within the floodplain and one-half mile on each side of the River (Bloom Biological 2007A). Additional surveys for special-status species in habitat suitable for hermit warbler were conducted within Castaic Creek, Salt Creek, the High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek (Dudek and Associates 2006B, 2006D, 2006E), within other portions of the Specific Plan area not already mentioned (Dudek and Associates 2006C; Impact Sciences 2000; SAIC 2003), and within areas upstream of the VCC planning area, including the Castaic Mesa area, by PCR in 1998 and Compliance Biology in 2006 (PCR 1998; Compliance Biology 2006A, 2006D).

This species has been observed within the woodland habitat on site in several years during the bird surveys conducted from 1988 through 2006 along the Santa Clara River (Guthrie 1994B, 1996B, 2002C). The Project area is within the winter range of this species; this species typically nests in mature forests at higher elevations in the Sierra Nevada and higher elevations of the Coast and Transverse Mountain ranges (Zeiner *et al.* 1990A). All observed individuals were thought to be migrants; no nesting by this species has been confirmed on site. For the purpose of the impact analysis, it is assumed that nesting does not occur on site, and all impacts would be to migrating individuals that forage on site.

Suitable foraging habitat for migrant hermit warblers on site includes California walnut woodland, coast live oak woodland, mixed oak woodland and forest, southern coast live oak riparian forest, valley oak woodland, and valley oak/grass. A total of 1,495 acres of suitable habitat for migrant hermit warblers is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 9.4 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 0.6% of suitable habitat on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 1.4 acres would be temporarily impacted.

The hermit warbler is still a wide-ranging species and uses a variety of woodland forest and oak riparian habitats during migration. The construction of RMDP facilities would be phased over a long period of time and more than 1,000 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 9.4 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 85 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 5.7% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat).

The hermit warbler is still a wide-ranging species and only uses the Project area during migration. Following build-out, approximately 1,290 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would remain as protected open space. Therefore, the loss of 85 acres of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 95 acres (6.3%).

The hermit warbler is still a wide-ranging species and only uses the Project area during migration. Following build-out, approximately 1,290 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would remain as protected open space. Therefore, the combined loss of 95 acres of habitat would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Hermit warblers are highly mobile; therefore, it is unlikely that RMDP-related construction activities would result in injury or mortality of adult birds migrating through the Project area. Because this species does not nest on site, implementation of the RMDP and the SCP would not result in destruction of nests, young, or eggs as a result of vegetation clearing or grading activities. Any migrants on site during construction activities may be displaced from removed habitat, but there would be substantial available habitat for this species elsewhere in the Project vicinity. Because no substantial impacts from implementation the RMDP and the SCP are expected to occur, the Project would not have a substantial direct adverse effect on this species; cause the species population to

drop below self-sustaining levels on site or rangewide; interfere with the movement of the species between important habitat areas; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals. The hermit warbler is highly mobile and not expected to nest on site. Individuals may be displaced from suitable habitat, but no injury or mortality of adults or destruction of nests, eggs, or young is expected to occur. Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

In the short term, construction activities associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would have the potential to affect this species in suitable habitat adjacent to construction zones. These impacts could include exposure to construction-related dust, noise, ground vibration, and nighttime illumination that could inhibit the species from using suitable habitat for foraging. Potential long-term secondary effects, such as habitat fragmentation impacts, increased human activity, and increased pet, stray, and feral cats and dogs, and pesticide use are unlikely to substantially affect species because it can use a variety of woodland habitats within the region and is highly mobile. The species would not be vulnerable to the nest predation or cowbird nest parasitism issues associated with development edges because it is not known to nest in the Project region.

For these reasons, potential short-term and long-term secondary impacts would not have a substantial adverse effect on this species; interfere with the movement of the species between important habitat areas; cause the species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the hermit warbler (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 9.6 acres (0.6%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 4 – 9.0 acres (0.6%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 5 – 13 acres (0.9%) of permanent loss and 1.4 acres of temporary loss;
- Alternative 6 – 18 acres (1.2%) of permanent loss and 1.4 acres of temporary loss; and
- Alternative 7 – 5.7 acres (0.4%) of permanent loss and 13 acres of temporary loss.

Compared to Alternative 2, which would result in 9.4 acres (0.6%) of permanent habitat loss and 1.4 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 and 4 would be the same, under Alternatives 5 and 6 would be somewhat more, and under Alternative 7 would be marginally less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 6 would be the same, and under Alternative 7 would be substantially more. The difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in substantially fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts from Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the hermit warbler (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 66 acres (4.4%) of permanent loss;
- Alternative 4 – 65 acres (4.3%) of permanent loss;
- Alternative 5 – 66 acres (4.4%) of permanent loss;
- Alternative 6 – 41 acres (2.7%) of permanent loss; and
- Alternative 7 – 44 acres (3.0%) of permanent loss.

Compared to Alternative 2, which would result in 85 acres (5.7%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 6 and 7

would impact substantially fewer acres than the other alternatives; these reductions are primarily due to reductions of the project footprint for the various alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the hermit warbler:

- Alternative 3 – 76 acres (5.1%) of permanent loss;
- Alternative 4 – 74 acres (4.9%) of permanent loss;
- Alternative 5 – 79 acres (5.3%) of permanent loss;
- Alternative 6 – 59 acres (3.9%) of permanent loss; and
- Alternative 7 – 50 acres (3.4%) of permanent loss.

Compared to Alternative 2, which would result in 95 acres (6.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, with Alternatives 6 and 7 having the fewest impacts compared to the other alternatives. These reductions are primarily due to reductions of the project footprint for the various alternatives. Because the combined direct and indirect permanent loss of suitable habitat for the hermit warbler occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to hermit warbler individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than for Alternative 2. Migrant individuals may occasionally be displaced from suitable habitat, but injury or mortality of adults or destruction of nests, eggs, or young is not expected to occur. Therefore, this impact (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development. Because migrating individuals could use a variety of alternative woodland habitats in the Project region, short-term and long-term secondary impacts would be adverse but not significant under Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the hermit warbler because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of approximately 1,290 acres of suitable habitat in the High Country SMA, Salt Creek area, and River Corridor SMA. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, vibration, lighting, and increased human activity during construction because migrating individuals will have access to habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects such as increased human activity; pet, stray, and feral cats and dogs; pesticides; and lighting will also be mitigated through a variety of measures.

LAWRENCE'S GOLDFINCH (NESTING) (BCC, CALIFORNIA SPECIAL ANIMAL)

Life History

Lawrence's goldfinch (*Carduelis lawrencei*) is locally common along the western edge of the southern deserts, from Santa Clara and Monterey counties south through coastal slopes, and occasionally surrounding the foothills of the Central Valley (Zeiner *et al.* 1990A). This species is unusual in that it generally migrates in an east to west direction between breeding areas in California and wintering areas in northern Mexico, southern Arizona, and New Mexico. Lawrence's goldfinch primarily breeds in California, but also south into northern Baja California, Mexico. Breeding tends to be concentrated in the foothills of the southern Sierra Nevada through the southern coastal ranges, and southward into the transverse ranges (Gough *et al.* 1998). During the non-breeding season, Lawrence's goldfinch can be found in north-central California, central and southern Arizona, southwestern New Mexico, west Texas, and northern Baja California and northern Sonora, Mexico (NatureServe 2007), although this species appears to have an erratic and complex distribution from year to year (Davis 1999).

The Lawrence's goldfinch uses cropland and hedgerows, shrubland and chaparral, conifer, hardwood, and mixed woodlands (NatureServe 2007). It prefers valley foothill woodlands and hardwood conifer forests, southern California desert riparian, palm oasis, pinyon–juniper, and lower montane areas. In California, the Lawrence's goldfinch has been observed nesting in oaks, cypress, sycamore, cedars, and riparian thickets (Zeiner *et al.* 1990A).

The Lawrence's goldfinch is primarily a seed eater with a preference for fiddleneck (*Amsinckia* sp.), but it occasionally eats insects and fruits (Davis 1999). Individuals forage in tall annual weed patches, meadows, open hillsides, riparian areas, agricultural margins, and chaparral areas (Davis 1999). It gleans seeds while perched, forages for fallen seeds from the ground, and pecks at fleshy fruits.

The breeding season of the Lawrence's goldfinch in California is March through August, with nesting occurring through mid-April to early July.

In addition to direct loss of habitat, Lawrence's goldfinch is vulnerable to overgrazing, soil disturbance/grading, and fire, which generally cause habitat degradation. Altered fire regime may cause vegetation type conversion from woodland, chaparral, and shrubland to non-native grasslands, increasing annual seed plant cover and causing the direct loss of available mature trees, chaparral, and shrubs that provide vertical structure necessary for many bird species, including Lawrence's goldfinch. This species may also be vulnerable to brown-headed cowbird nest parasitism along habitat edges in fragmented habitat (NatureServe 2007). Native birds such as Lawrence's goldfinch are vulnerable to urban-adapted native and non-native mesopredators such as raccoons, skunks, opossums, and domestic cats; in small, isolated habitat patches where coyotes, which prey on these species, are absent (Crooks *et al.* 2001; Crooks and Soulé (1999).

Several other human- or development-related factors may affect Lawrence's goldfinch. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Additional potential long-term effects related to development include increased human activity, which may disturb nesting or result in habitat degradation from trampling; pesticides, which may contaminate food sources and cause secondary poisoning; lighting; and Argentine ants, which may prey on nestlings.

Survey Results

Suitable nesting and foraging habitat for Lawrence's goldfinch is present within the Specific Plan area, the Salt Creek area, and the VCC and Entrada planning areas. This species has been observed in coastal scrub in the northern and northeastern portions of the Project area and within the riparian habitats in the Santa Clara River over multiple years within the Specific Plan and Entrada planning areas during annual bird surveys.

Bird surveys were conducted by Daniel Guthrie from 1988 through 2006 within the portion of the Santa Clara River and Castaic Creek in and adjacent to the Project boundary in areas of suitable habitat for Lawrence's goldfinch (1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000A, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004A, 2004B, 2004C, 2004D, 2004E, 2004F, 2004G, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C). The surveys were conducted in the riparian areas in the Santa Clara River corridor and on both sides of the River, including some of the agriculture areas near the River. Extensive field surveys were also conducted on portions of Newhall Land and Farming Company property by Bloom Biological, Inc. from February through June 2007. The Bloom Biological, Inc. survey area consisted of approximately 25 miles of the Santa Clara River and its major tributaries in and around the Project site. The survey covered all habitats within the riverbed and one-half mile on each side of the River (Bloom Biological 2007A). Bloom Biological, Inc. found Lawrence's goldfinch to be a common migrant throughout the survey area and a fairly common resident in oak woodlands. Two to 70 individuals were recorded daily throughout the month of March, mostly in migrant flocks. This relatively high frequency of observations just prior to the nesting season suggests that Lawrence's goldfinch likely uses habitat within the Project area for breeding and nesting.

Additional surveys in suitable habitat for Lawrence's goldfinch were conducted within portions of the Santa Clara River in 1994, 1996, 1997, and 1998 (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); within other areas of the Specific Plan area not already mentioned (Dudek and Associates 2006C; Impact Sciences 2000; SAIC 2003); within areas upstream of the

VCC planning area, including the Castaic Mesa area by PCR in 1998 and by Compliance Biology in 2006 (PCR 1998; Compliance Biology 2006A, 2006D); and along the Santa Clara River and in uplands throughout the Project area by Bloom Biological, Inc. (2008).

The Project area provides both foraging and nesting habitat for the species. Coast live oak woodland, valley oak woodland, mixed oak woodland, southern coast live oak riparian forest, southern cottonwood–willow riparian forest, southern willow scrub, and riparian scrub provide nesting and foraging habitat for Lawrence's goldfinch on site and total 1,451 acres in the Project area. Additional suitable foraging only habitat in the Project area includes big sagebrush scrub, California sagebrush scrub and associations, California sagebrush–black sage, California sagebrush–California buckwheat scrub, California sagebrush scrub–undifferentiated chaparral, undifferentiated chaparral scrubs, and chamise chaparral that total 6,563 acres. The combined suitable nesting and/or foraging habitat in the Project area totals 8,014 acres.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 128 acres of suitable nesting and/or foraging habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.6% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). Of these impacts, 48 acres are nesting and foraging habitat (*i.e.*, coast live oak woodland, valley oak woodland, mixed oak woodland, southern coast live oak riparian forest, southern cottonwood–willow riparian forest, southern willow scrub, and riparian scrub), representing 3.3% of this habitat on site. The remaining 80 acres of impact are to foraging habitat only, representing 1.2% of this habitat on site. A total of 55 acres of suitable nesting and/or foraging habitat would be temporarily impacted, of which 46 acres are nesting and foraging habitat and 9.3 acres are foraging habitat only.

The Lawrence's goldfinch is still a wide-ranging species and uses a variety of scrub, chaparral, riparian, and woodland habitats. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 128 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,037 acres of suitable nesting and/or foraging habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 25.4% of these habitats on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). Of these impacts, 73 acres are nesting and foraging habitat, representing 5.0% of this habitat on site. The remaining 1,964 acres of impact are to foraging habitat only, representing 29.9% of this habitat on site.

The Lawrence's goldfinch is still relatively widespread and common throughout its range. However, the overall loss of 25.4% of nesting and/or foraging habitat, including 5.0% of foraging and nesting habitat and 29.9% of foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,164 acres (27.0%). Of

these impacts, 121 acres are nesting and foraging habitat, representing 8.3% of this habitat on site. The remaining 2,043 acres of impact are to foraging habitat only, representing 31.1% of this habitat on site.

The combined loss of 27.0% of nesting and/or foraging habitat, including 8.3% of foraging and nesting habitat and 31.1% of foraging habitat only, would be a substantial habitat loss on site. This impact would be considered a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The Lawrence's goldfinch is a highly mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. In addition, implementation of the RMDP could result in mortality of young and/or eggs due to destruction of nests if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The Lawrence's goldfinch is a mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual adult birds. However, foraging individuals may avoid or leave construction areas during construction activities. In addition, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Indirect, permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. Although construction would be of a short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of nesting and foraging activities, potentially affecting reproductive success.

Potential long-term secondary impacts associated with urban development include noise; nighttime illumination; Argentine ants, which may prey on nestlings; pesticide use resulting in loss of prey and/or secondary poisoning; increased human activity; harassment and predation by pet, stray, and feral cats and dogs; and increased mesopredators as a result of increased habitat fragmentation. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term.

Because the potential short-term and long-term secondary impacts could occur over a much broader area than the direct and indirect loss of habitat, secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable nesting and/or foraging habitat for Lawrence's goldfinch (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 110 acres (1.4%) permanent loss and 57 acres of temporary loss of nesting and/or foraging habitat, including
    - 34 acres (2.3%) of permanent loss and 45 acres of temporary loss of nesting and foraging habitat

  - 76 acres (1.2) of permanent loss and 12 acres of temporary loss of foraging habitat only;
- Alternative 4 – 111 acres (1.4%) permanent loss and 51 acres of temporary loss of nesting and/or foraging habitat, including
  - 35 acres (2.5%) of permanent loss and 43 acres of temporary loss of nesting and foraging habitat
  - 77 acres (1.2%) of permanent loss and 8.7 acres of temporary loss of foraging habitat only;
- Alternative 5 – 125 acres (1.6%) permanent loss and 63 acres of temporary loss of nesting and/or foraging habitat, including
  - 44 acres (3.0%) of permanent loss and 48 acres of temporary loss of nesting and foraging habitat
  - 82 acres (1.2%) of permanent loss and 14 acres of temporary loss of foraging habitat only;
- Alternative 6 – 101 acres (1.3%) permanent loss and 60 acres of temporary loss of nesting and/or foraging habitat, including
  - 34 acres (2.3%) of permanent loss and 44 acres of temporary loss of nesting and foraging habitat
  - 68 acres (1.0%) of permanent loss and 16 acres of temporary loss of foraging habitat only; and
- Alternative 7 – 55 acres (0.7%) permanent loss and 56 acres of temporary loss of nesting and/or foraging habitat, including
  - 13 acres (0.9%) of permanent loss and 37 acres of temporary loss of nesting and foraging habitat
  - 42 acres (0.6%) of permanent loss and 43 acres of temporary loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 128 acres (1.6%) of permanent loss and 55 acres of temporary impacts, Alternatives 3 through 6 would have not substantially different permanent and temporary impacts. Alternative 7 would have substantially reduced permanent impacts and substantially greater temporary impacts compared to the other alternatives. This general pattern is similar for permanent impacts to nesting and foraging habitat, with somewhat reduced impacts for Alternatives 3, 4, and 6, marginally reduced impacts for Alternative 5, and substantially reduced impacts for Alternative 7. For temporary impacts to nesting and foraging habitat, Alternatives 3 through 6 would have marginally different impacts and Alternative 7

would have somewhat reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 80 acres (1.2%) of permanent loss, Alternatives 3 through 6 would have similar or marginally reduced impacts and Alternative 7 would have somewhat reduced impacts. Compared to Alternative 2 for temporary impacts to foraging habitat only, which would result in 9.0 acres of temporary loss, Alternatives 3 through 6 would not be substantially different, and Alternative 7 would be somewhat higher.

The relatively greater difference between Alternative 7 and the other alternatives is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in fewer permanent impacts and relatively more temporary impacts.

The overall permanent loss of nesting and/or foraging habitat resulting from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be less than or similar in magnitude compared to Alternative 2. This impact would not be considered a substantial adverse effect on the habitat of a special-status species; would not have the potential to substantially reduce the habitat of the species on site or rangewide; would not cause the species to drop below self-sustaining levels on site or rangewide; would not threaten to eliminate the species on site or rangewide; and would not substantially reduce the number or restrict the range of the species. The direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant under Alternatives 3 through 7.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Lawrence's goldfinch (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,921 acres (24.0%) permanent loss of nesting and/or foraging habitat, including
  - 70 acres (4.8%) of permanent loss of nesting and foraging habitat
  - 1,851 acres (28.2%) of permanent loss of foraging habitat only;
- Alternative 4 – 1,865 acres (23,3%) permanent loss of nesting and/or foraging habitat, including
  - 57 acres (3.9%) of permanent loss of nesting and foraging habitat
  - 1,808 acres (27.5%) of permanent loss of foraging habitat only;

- Alternative 5 – 1,817 acres (22.7%) permanent loss of nesting and/or foraging habitat, including
  - 57 acres (3.9%) of permanent loss of nesting and foraging habitat
  - 1,760 acres (26.8%) of permanent loss of foraging habitat only;
- Alternative 6 – 1,543 acres (19.3%) permanent loss of nesting and/or foraging habitat, including
  - 32 acres (2.2%) of permanent loss of nesting and foraging habitat
  - 1,511 acres (23.0%) of permanent loss of foraging habitat only; and
- Alternative 7 – 1,377 acres (17.2%) permanent loss of nesting and/or foraging habitat, including
  - 13 acres (0.9%) of permanent loss of nesting and foraging habitat
  - 1,364 acres (20.8%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 2,037 acres (25.4%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in 73 acres (5.0%) of permanent loss of nesting and foraging habitat, Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for permanent loss of foraging habitat only, which would result in 1,964 acres (29.9%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or foraging habitat, Alternatives 4 through 7 would have fewer impacts than Alternative 3 because the VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat only. These impacts would have a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Lawrence's goldfinch:

- Alternative 3 – 2,031 acres (25.3%) permanent loss of nesting and/or foraging habitat, including
  - 96 acres (6.6%) of permanent loss of nesting and foraging habitat
  - 1,935 acres (29.5%) of permanent loss of foraging habitat only;
- Alternative 4 – 1,976 acres (24.7%) permanent loss of nesting and/or foraging habitat, including
  - 92 acres (6.3%) of permanent loss of nesting and foraging habitat
  - 1,885 acres (28.7%) of permanent loss of foraging habitat only;
- Alternative 5 – 1,942 acres (24.2%) permanent loss of nesting and/or foraging habitat, including
  - 101 acres (7.0%) of permanent loss of nesting and foraging habitat
  - 1,841 acres (28.1%) of permanent loss of foraging habitat only;
- Alternative 6 – 1,644 acres (20.5%) permanent loss of nesting and/or foraging habitat, including
  - 65 acres (4.5%) of permanent loss of nesting and foraging habitat
  - 1,579 acres (24.1%) of permanent loss of foraging habitat only; and
- Alternative 7 – 1,432 acres (17.9%) permanent loss of nesting and/or foraging habitat, including
  - 47 acres (3.2%) of permanent loss of nesting and foraging habitat
  - 1,385 acres (21.1%) of permanent loss of foraging habitat only.

Compared to Alternative 2 for nesting/and or foraging habitat, which would result in 2,164 acres (27.0%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. This general pattern is similar for permanent impacts to nesting and foraging habitat. Compared to Alternative 2, which would result in the loss of 120 acres (8.3%), Alternatives 3 through 7 would have reduced impacts. Compared to Alternative 2 for the combined direct and indirect permanent loss of foraging habitat only, which would result in 2,044 acres (31.1%) of permanent loss, Alternatives 3 through 6 would have reduced impacts. Overall for nesting and/or

foraging habitat, Alternatives 4 through 7 would have fewer combined direct and indirect permanent impacts than Alternative 3 because VCC would not be constructed under Alternatives 4 through 7, and each would have successively fewer impacts due to other differences in the Project footprints. Alternative 7 would have the least amount of impact due to pullbacks from the Santa Clara River and its tributaries and other differences in the Project footprint.

Although Alternatives 3 through 7 would have reduced combined direct and indirect permanent impacts compared to Alternative 2, all would result in impacts to nesting and foraging habitat and substantial impacts to foraging habitat only. These combined direct and indirect permanent impacts would have a substantial adverse effect on the habitat of a special-status species; would have the potential to substantially reduce the habitat of the species on site or rangewide; would potentially cause the species to drop below self-sustaining levels on site or rangewide; would threaten to eliminate the species on site or rangewide; or would substantially reduce the number or restrict the range of the species. Combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation, under Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to Lawrence's goldfinch individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Although adult birds would likely avoid injury or mortality, loss of young and/or eggs due to destruction of nests could occur, and provisioning of young could be disrupted, if construction/grading activities occurred during the nesting season of this species. Indirect, permanent impacts (Impacts to Individuals) under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term secondary impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than with implementation of the RMDP and the SCP

because of the much larger area of impact. If these impacts occur during the nesting season, reproductive success could be affected

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include noise, lighting, Argentine ants, increased human activity, increased predation, and use of pesticides described above for Alternative 2.

Because these potential short-term and long-term secondary effects could occur over a much broader area than direct or indirect loss of habitat, they would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to Lawrence's goldfinch: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and habitat outside the Project footprint.

The Lawrence's goldfinch is probably a relatively common breeding resident on site in habitat that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, individuals could be displaced from occupied habitat by construction activities. Impacts to individuals also could occur if active nests were disturbed during vegetation clearing and construction/grading activities, resulting in the destruction of the nests and loss of eggs and/or young, or interfering with foraging or provisioning of young. Construction activities may also cause abandonment of nests due to human activity, noise, and ground vibration. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

The combined permanent loss of suitable nesting and/or foraging habitat for the Lawrence's goldfinch resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,432 acres (17.9%) under Alternative 7 to 2,164 acres (27.0%) under Alternative 2. This would be a substantial loss of suitable habitat for this species and will alter its use of the Project area. As mitigation for this impact, the combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a permanent open space system that will provide suitable habitat to support both foraging and breeding by the Lawrence's goldfinch in the Project vicinity. Implementation of these mitigation measures will

result in protection and management of approximately 4,332 acres of suitable habitat for the Lawrence's goldfinch in the River Corridor SMA, High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With regard to secondary effects, foraging and nesting activities by the Lawrence's goldfinch could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may cause adults to vacate territories and abandon nests due to stress and disruption of normal behavioral patterns, and nests may also be more vulnerable to nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting pre-construction surveys to determine if active nests, are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include habitat fragmentation, which may increase cowbird nest parasitism; wildfire; increased human activity; lighting; pesticides, which may cause secondary poisoning and loss of food resources; harassment by pet, stray, and feral cats and dogs and other mesopredators; and Argentine ants that may prey on nestlings. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of 4,264 acres of suitable habitat in the High Country SMA and Salt Creek area will provide Lawrence's goldfinch with relatively undisturbed habitat. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by predators and reduce behavioral disturbances and physiological stress. Limited recreational usage and access restrictions within the High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect Lawrence's goldfinch by allowing them to nest and forage without disturbance. Controls on pesticides will reduce the chance of direct and secondary poisoning and loss of food sources. Cowbird trapping will be conducted as necessary.

The specific mitigation measures for Lawrence's goldfinch are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-145 IMPACTS TO INDIVIDUALS – LAWRENCE'S GOLDFINCH

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures to avoid, minimize, and mitigate the loss of Lawrence's goldfinch individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or

endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures to reduce impacts to Lawrence's goldfinch individuals

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Lawrence's goldfinch individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-146 LOSS OF HABITAT – LAWRENCE'S GOLDFINCH

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for Lawrence's goldfinch through habitat protection, restoration and enhancement, and management.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and

values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 68.5 acres of suitable nesting and/or foraging habitat for Lawrence's goldfinch**.** The High Country SMA will preserve and enhance approximately 3,243 acres of suitable nesting and/or foraging habitat for Lawrence's goldfinch.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for the loss of habitat for Lawrence's goldfinch through habitat protection, restoration and enhancement, and management.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural

undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for Lawrence's goldfinch would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-147 SECONDARY IMPACTS – LAWRENCE'S GOLDFINCH

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for long-term secondary effects associated with build-out of the Specific Plan, VCC, and Entrada planning areas such as habitat fragmentation, increased human activity, inadvertent impacts to habitat during construction, and nighttime lighting.

SP-4.6-1 through SP-4.6-16, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, and SP-4.6-63, as described above, refer to habitat protection and management in the River Corridor SMA and High Country SMA that will be implemented to mitigate for long-term habitat fragmentation effects and increased human activity.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area.

Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to Lawrence's goldfinch, including short-term construction-related dust, noise, ground vibration and increased human activity as well as long-term habitat fragmentation; increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs and other mesopredators; Argentine ants; reduction of prey and secondary poisoning from pesticide use; and cowbird nest parasitism.

BIO-52 and BIO-56, as described above, will mitigate the effects of noise and ground vibration by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e*., a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-1 through BIO-16 and BIO-19 through BIO-21, as described above, will mitigate for increased human activity in the Project area through habitat protection, restoration and enhancement, and management.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-63 and BIO-69 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-64 will be implemented to prevent poisoning and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-78 requires implementation of a cowbird trapping program once vegetation clearing begins. The program shall be implemented each day beginning April 1 and concluding on or about November 1, through the construction, maintenance, and monitoring period of the riparian restoration sites. In the event that trapping is terminated after the first few years of development, subsequent phases of the RMDP development shall trigger initiation of trapping surveys.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to Lawrence's goldfinch by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the Lawrence's goldfinch would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

OAK TITMOUSE (NESTING) (CALIFORNIA SPECIAL ANIMAL)

Life History

The oak titmouse (*Baeolophus inornatus*) generally occurs in the western portion of North America at low- to mid-elevations, up to 2,000 meters (6,650 feet) AMSL (Block 1990). This species breeds from southwestern Oregon south through California to northwestern Baja California, Mexico (Wilbur 1987; Cicero 2000). Its range includes most of western California, encircling, but not including, the San Joaquin Valley. Its range extends east from the coast through Kern County and onto the western slope of the Sierra Nevada, and north from San Diego County to Shasta County. Scattered local populations also occur north of Humboldt County, near the coast, and in Siskiyou County. The oak titmouse occurs with limited secondary contact with the juniper titmouse (*B. ridgwayi*) on the Modoc Plateau (Cicero 2000).

The oak titmouse inhabits a variety of habitat types but primarily occurs in oaks, especially those in warm, dry regions (Cicero 2000). This species occurs in montane hardwood–conifer; montane hardwood; blue, valley, and coastal oak woodlands (*Quercus douglasii*, *Q. lobata*, *Quercus* spp.); and montane and valley foothill riparian habitats (Zeiner *et al.* 1990A). The oak titmouse also occurs in western juniper (*Juniperus occidentalis*) woodland, open pine (*Pinus* spp.) forests, and communities of single-leaf pinyon (*Pinus monophylla*) or California juniper (*Juniperus californica*) mixed with Joshua trees (*Yucca brevifolia*) (Johnson and Cicero 1985; Cicero 2000), and it sometimes occurs in residential areas (Zeiner *et al.* 1990A). The oak titmouse generally breeds near water.

The oak titmouse feeds on insects, spiders, berries, acorns, and seeds (Zeiner *et al.* 1990A), with plant material constituting the majority of its diet in fall and winter (Cicero 2000). It also stores seeds (Davis *et al.* 1973). The oak titmouse generally forages in the woody portions of vegetation, including the subcanopy and bark surface, as well as within the foliage, but it also occasionally forages on the ground. It typically carries food to an elevated perch with good visibility in order to feed (Dixon 1949). The oak titmouse occasionally drinks water (Williams and Koenig 1980).

The oak titmouse breeds from March into July, with peak breeding occurring in April and May. Solitary pairs nest in natural tree holes or woodpecker-excavated cavities (Zeiner *et al.* 1990A), although it may excavate its own cavity or use artificial nest boxes (Cicero 2000). The oak titmouse is diurnally active and non-migratory (Zeiner *et al.* 1990A). Both members of a pair defend a territory year round (Dixon 1956). Juveniles appear to disperse long distances from parental territories, forced by aggressive interactions with the parents (Price 1936; Dixon 1949). In the San Francisco Bay region, oak titmouse territories were estimated to range from 1.7 and 2.6 hectares (4.2 to 6.4 acres) (Dixon 1949, 1956; Cicero 2000). Territory size likely differs geographically, with larger territories in habitats with lower productivity (Cicero 2000). The same territories are maintained through the breeding season as long as a suitable nest cavity is

present. Territories are generally reused by the same pairs year after year with boundaries remaining remarkably stable (Dixon 1949). The oak titmouse is considered to be one of the most sedentary species in the family Paridae (chickadees and titmice) (Cicero 2000).

This species is primarily threatened by loss of oak woodland habitat. In California, oak woodlands are being cleared for agriculture, rangeland, and urbanization (Cicero 2000). Southern California, the Central Valley, and the western foothills of Sierra Nevada have experienced the greatest losses in oak woodlands, especially since the 1970s (Adams *et al.* 1991; Mensing 1991; Cicero 2000). Although the oak titmouse is still common throughout its distribution, the sustainability of populations will depend on the conservation and management of oak woodlands. Trees with natural cavities are critical for oak titmouse nesting, which are also used by the introduced European starling, which occurs in large population in agricultural and urban areas and may be significant competitor with the oak titmouse for breeding sites. Several other human- or development-related factors may affect the oak titmouse. Construction-related impacts include dust; noise and ground vibration; increased human activity in close proximity to nesting and foraging areas; and lighting, which may alter behavior, induce physiological stress, and increase predation risk. Additional potential long-term effects related to development include increased human activity, which may disturb nesting; pesticides, which may contaminate food sources, cause reduction of insect prey, and cause secondary poisoning; lighting; and Argentine ants, which may prey on nestlings.

Survey Results

Suitable upland oak woodland and riparian habitat for the oak titmouse is present throughout the Project area. Although surveys specifically for the oak titmouse have not been conducted because of its relatively low sensitivity status (California Special Animal), suitable upland and riparian habitat for this species has been extensively surveyed during focused surveys for other bird species, during which all birds detected were recorded.

Surveys for upland bird species were conducted throughout the Project area and in nearby areas between 1995 and 2008. Surveys in the Specific Plan area covered the Landmark Village, Mission Village, and Homestead East and West areas as well as Potrero, Long, and Chiquito canyons and the upland habitats along the Santa Clara River (Bloom Biological 2007A, 2008; Dudek and Associates 2006C; Guthrie 2000A, 2000B, 2004A, 2004D, 2004E; Impact Sciences 2000; RECON and Impact Sciences 1996; SAIC 2003). The High Country SMA and Salt Creek area (in the Specific Plan area) were surveyed by Dudek and Associates in 2005 (2006B). Upland surveys have also been conducted in the VCC (Dudek and Associates 2006D; Guthrie 2004B) and Entrada planning areas (Dudek and Associates 2006E; Guthrie 2004G). Areas near the Project area that have been surveyed for upland bird species include the Legacy Village area adjacent to the Project area on the south and east (Guthrie 2004C), the Castaic Junction area just north of the Entrada planning area (Guthrie 2004F, 2004I), the Riverpark

site (now referred to as RiverVillage) upstream of the Specific Plan area (Compliance Biology 2003A), and upland areas upstream of the VCC planning area, including the Castaic Mesa area (PCR 1998; Compliance Biology 2006A, 2006D).

Surveys for riparian species have been conducted for multiple years (1988 through 2008) along the Santa Clara River. These surveys were conducted by Guthrie from 1988 through 2006 within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line (Guthrie 1988, 1989, 1990, 1991A, 1991B, 1992, 1993A, 1993B, 1994A, 1994B, 1995A, 1995B, 1996A, 1996B, 1997A, 1997B, 1998A, 1998B, 1999A, 1999B, 1999C, 2000B, 2000C, 2000E, 2000F, 2001A, 2001B, 2002A, 2002C, 2003A, 2003B, 2004F, 2004H, 2004I, 2005A, 2005B, 2006A, 2006B, 2006C); within portions of the Santa Clara River by Labinger *et al.* and Labinger and Greaves in 1994, 1996, 1997, and 1998 (Labinger *et al.* 1995, 1996, 1997A, 1997B; Labinger and Greaves 1999A); within Castaic Creek, Salt Creek, High Country SMA, and portions of the Santa Clara River adjacent to the Project site by Dudek and Associates (2006B, 2006D, 2006E); and within Castaic Creek and the Santa Clara River from the I-5 bridge to Las Brisas Bridge west of the Ventura County line by Bloom Biological, Inc. in 2007 (2007A).

These surveys have established that the oak titmouse is common and abundant in the Project area, and nests on site in southern cottonwood–willow riparian and coast live oak communities. It has been observed over multiple years along the Santa Clara River and in the Specific Plan, VCC, and Entrada planning areas. The oak titmouse was observed most recently by Guthrie in 2006 (2006C) and by Bloom Biological, Inc. in 2007 and (2007A, 2008). Most observations of this species were not mapped because of its common occurrence and low sensitivity status.

Suitable nesting habitat for oak titmouse in the Project area includes coast live oak woodland, mixed oak woodland, valley oak woodland, valley oak/grass, southern coast live oak riparian forest, and southern cottonwood–willow riparian. A total of 1,890 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 45 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 2.4% of these habitats on site (**Figure 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat). A total of 41 acres would be temporarily impacted.

The oak titmouse is still a wide-ranging species and uses a variety of upland and riparian woodland habitats. The construction of RMDP facilities would be phased over a long period of time and at least 1,560 of acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 45 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 92 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 4.9% of these habitats on site (**Figures 4.5-108**, Alternative 2 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat).

The oak titmouse is still a wide-ranging species and is commonly observed in the Project area in a variety of riparian and woodland habitats. Approximately 1,560 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would remain as protected open space after build-out of the area. Therefore, the permanent loss of 92 acres of habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the

species population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 138 acres (7.3%). The oak titmouse is still a wide-ranging species, is commonly observed in the Project area in a variety of riparian and woodland habitats, and approximately 1,560 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would remain as protected open space after build-out of the area. Therefore, the permanent loss of 138 acres of habitat would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

The oak titmouse is a relatively mobile species and it is unlikely that construction activities associated with implementation of the RMDP would result in injury or mortality of individual adult birds. However, individuals may be displaced from territories within or near construction areas during construction activities. Also, implementation of the RMDP could result in mortality of young and/or eggs due to destruction of nests if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Implementation of the SCP would not directly impact this species. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The oak titmouse is a relatively mobile species and it is unlikely that build-out of the Specific Plan, VCC, and Entrada planning areas would result in the loss of individual

adult birds. However, individuals may be displaced from territories within or near construction areas during construction activities. Also, mortality of young and/or eggs due to destruction of nests could occur if construction/grading activities occurred during the nesting season of this species. Disruption of foraging activities could affect provisioning of young, thus affecting reproductive success. These impacts would be a substantial adverse impact on this species (significance criterion 1). Indirect, permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term secondary effects of construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas include construction-related noise, ground vibration, fugitive dust, and nighttime illumination. Although construction would be of a short-term nature, if these activities occurred during the breeding season they could have a substantial direct adverse effect on this species due to potential disruption of nesting and foraging activities, potentially affecting reproductive success.

Potential long-term secondary impacts associated with urban development include noise, nighttime illumination, Argentine ants which may prey on nestlings, pesticide use resulting in loss of food sources and/or secondary poisoning, increased human activity, harassment and predation by pet, stray, and feral cats and dogs, increased mesopredators as a result of increased habitat fragmentation, and increased competition with non-natives species such as European starling for nest sites. These secondary impacts may result in abandonment of nests and lower reproductive success along the urban–open space edge over the long term.

Because the potential short-term and long-term secondary impacts could occur over a much broader area than the direct and indirect loss of habitat, secondary impacts would have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species' population to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for oak titmouse (**Figures 4.5-109**

through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 33 acres (1.7%) of permanent loss and 40 acres of temporary loss;
- Alternative 4 – 33 acres (1.7%) of permanent loss and 38 acres of temporary loss;
- Alternative 5 – 42 acres (2.2%) of permanent loss and 43 acres of temporary loss;
- Alternative 6 – 34 acres (1.8%) of permanent loss and 39 acres of temporary loss; and
- Alternative 7 – 13 acres (0.7%) of permanent loss and 36 acres of temporary loss.

Compared to Alternative 2, which would result in 45 acres (2.4%) of permanent habitat loss and 41 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 6 would be marginally to somewhat reduced and Alternative 7 would be substantially less. Compared to Alternative 2, the temporary loss of habitat under Alternatives 3 through 7 would be not substantially different to somewhat reduced. The permanent impacts under Alternative 7 would be substantially less compared to the other alternatives due primarily to the pullback of RMDP facilities from the Santa Clara River and its tributaries.

Because the overall permanent loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be marginally to substantially reduced compared to Alternative 2 and temporary impacts would be not substantially different to somewhat reduced, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for oak titmouse (**Figures 4.5-109** through **4.5-113**, Alternatives 3 through 7 Impacts to Riparian, Oak Woodland, and Oak/Grass Wildlife Habitat):

- Alternative 3 – 72 acres (3.8%) of permanent loss;
- Alternative 4 – 68 acres (3.6%) of permanent loss;
- Alternative 5 – 68 acres (3.6%) of permanent loss;
- Alternative 6 – 41 acres (2.2%) of permanent loss; and
- Alternative 7 – 45 acres (2.4%) of permanent loss.

Compared to Alternative 2, which would result in 92 acres (4.9%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 and 5 would

have marginally reduced impacts compared to Alternative 3 and Alternatives 6 and 7 would have additional reductions compared to the other alternatives.

Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for oak titmouse:

- Alternative 3 – 105 acres (5.6%) of permanent loss;
- Alternative 4 – 100 acres (5.3%) of permanent loss;
- Alternative 5 – 110 acres (5.8%) of permanent loss;
- Alternative 6 – 75 acres (4.0%) of permanent loss; and
- Alternative 7 – 59 acres (3.1%) of permanent loss.

Compared to Alternative 2, which would result in 138 acres (7.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. There would generally be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 3, 4, 6, and 7. Alternative 5 would have the next largest impact compared to Alternative 2. Because the combined direct and indirect permanent loss of suitable habitat for oak titmouse occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be less than under Alternative 2, these impacts would be adverse but not significant.

Impacts to Individuals

The potential for impacts to oak titmouse individuals as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Although adult birds would likely avoid injury or mortality, loss of young and/or eggs due to destruction of nests could occur, and provisioning of young could be disrupted, if construction/grading activities occurred during the nesting season of this species. Indirect, permanent impacts (Impacts to Individuals) under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to urban development.

Short-term secondary impacts include construction-related dust, noise, ground vibration, and nighttime illumination. These effects are more likely to occur during build-out of the Specific Plan, VCC, and Entrada planning areas than with implementation of the RMDP and the SCP because of the much larger area of impact. If these impacts occur during the nesting season, reproductive success could be affected

Potential long-term secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas include noise, lighting, Argentine ants, increased human activity, increased predation, use of pesticides, and non-native competitors, described above for Alternative 2.

Because these potential short-term and long-term secondary effects could occur over a much broader area than direct or indirect loss of habitat, they would have a substantial adverse effect on the species and contribute to the reduction of its range and distribution. These long-term and short-term secondary impacts would be significant, absent mitigation for Alternatives 3 through 7.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to oak titmouse: (1) impacts to individuals; and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Nesting by oak titmouse occurs in areas that would be subject to disturbance as result of implementation of the RMDP or build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas. While adults are highly mobile and likely able to escape direct injury or mortality from relatively slow-moving construction equipment, impacts to individuals could occur if active nests are disturbed during vegetation clearing and construction/grading activities, including destruction of nests and loss of eggs and/or fledglings. Construction activities may also alter foraging behavior and thus potentially reduce the health of young and result in lower reproductive success. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active nest sites and postpone work within 300 feet of any active nest until young have fledged. In addition, a qualified biologist will be present during vegetation clearing and grading activities.

With regard to secondary effects, nesting and foraging activities by the oak titmouse could be adversely affected in the short term by increased human activity, noise, ground vibration, dust, and lighting. These secondary effects may alter foraging and provisioning of young. Construction-generated dust may affect habitat quality and both insect prey and vegetative food sources for the oak titmouse. Lighting may induce physiological stress and increase the risk of predation by nocturnal predators. These short-term construction-related secondary impacts will be minimized by conducting a survey to determine if active nests are present in the disturbance zone or within 300 feet, and by retaining a qualified biologist during all vegetation clearing and grading activities. Long-term development-related impacts include invasive species such as Argentine ants which may prey on nestlings; increased noise; lighting; pesticides that may cause secondary poisoning and loss of prey; human disturbances of nest sites; predation by pet, stray, and feral cats and dogs and other mesopredators; and competition for nest sites with non-native species such as European starling. These long-term secondary impacts will be minimized through several mitigation measures. Protection, restoration and enhancement, and management of approximately 1,563 acres of suitable habitat in the River Corridor SMA, High Country SMA, and Salt Creek area will provide the oak titmouse with relatively undisturbed habitat for nesting and foraging. Lighting restrictions along the perimeter of natural areas will help reduce predation of nest sites by nocturnal predators and reduce physiological stress. Limited recreational usage and access restrictions within the River Corridor SMA and High Country SMA; control of pet, stray, and feral cats and dogs in or near open space areas; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas will help protect the oak titmouse by allowing it to nest and forage without disturbance. Controls on pesticides will reduce the chance of secondary poisoning and loss of food sources. Controls on Argentine ants will help reduce impacts on young in nests.

The specific mitigation measures for the oak titmouse are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-148 IMPACTS TO INDIVIDUALS – OAK TITMOUSE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following measures avoid, minimize, and mitigate the loss of oak titmouse individuals through pre-development surveys.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during

development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two additional mitigation measures that would reduce impacts to oak titmouse individuals.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing impacts to wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-56 states that, within 30 days of ground-disturbing activities associated with construction or grading occurring during the nesting/breeding season of native bird species potentially nesting on the site, a survey shall be conducted to determine if active nests of protected bird species are present in the disturbance zone or within 300 feet (500 feet for raptors). The surveys shall continue on a weekly basis. If active nests are found, the nests shall be buffered from clearing and construction in the vicinity.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to oak titmouse individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-149 SECONDARY IMPACTS – OAK TITMOUSE

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that would mitigate for long-term secondary effects on oak titmouse associated with build-out of the Specific Plan, VCC, and Entrada planning areas, such as abandonment of nests from human activity and greater vulnerability to nocturnal predators as a result of nighttime lighting. These mitigation measures provide for protection, restoration, enhancement, and management of habitat in open space for oak titmouse that will offset secondary impacts. Mitigation measures to minimize inadvertent impacts to habitat outside construction zones will also be implemented.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figure 4.5-3**). The River Corridor SMA will preserve and enhance at least 316 acres of suitable habitat for oak titmouse. The High Country SMA will preserve and enhance approximately 868 acres of suitable habitat for oak titmouse.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA, including the following: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Several mitigation measures will control human activities in the River Corridor SMA and High Country SMA. SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats. SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

To avoid inadvertent impacts to habitat during construction, SP-4.6-20, SP-4.6-34, and SP-4.6-35 will be implemented. These mitigation measures require that all grading perimeters within the River Corridor SMA and High Country SMA be clearly marked and inspected by the biologist prior to grading and that the biologist work with the contractor to avoid inadvertent impacts to riparian and biological resources outside the grading area in the River Corridor SMA and High Country SMA.

SP-4.6-33 addresses edge effects along open space–urban boundary in the High Country SMA. This measure permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 addresses nighttime illumination by requiring that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate for secondary impacts to the oak titmouse, including short-term construction-related dust, noise, and ground vibration; and long-term impacts such as Argentine ants; increased human activity; greater vulnerability to predation by pet, stray, and feral cats and dogs; and impacts of pesticides such as secondary poisoning and loss of food resources.

Secondary effects of noise and ground vibration during construction will be addressed by BIO-52 and BIO-56, as described above, which will mitigate these effects by identifying nest sites and providing for buffers between nests and construction activities.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. This will reduce impacts to the oak titmouse by protecting habitat quality and by minimizing impacts on its insect prey and vegetative food resources. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years

or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. The Salt Creek area supports approximately 380 acres of suitable habitat for the oak titmouse.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities (County of Los Angeles 1988). Fencing shall extend to the root protection zone.

BIO-63, BIO-69, and BIO-73 will be implemented to mitigate for increased human activity and pet, stray, and feral cats and dogs.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to prevent impacts to protected vegetation communities and special-status plant and wildlife species due to increased human and pet presence.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

BIO-72 will mitigate impacts from the introduction of non-native invasive plant species by specifying that plant palettes proposed for use within 100 feet of native vegetation communities be reviewed to ensure that the proposed plants will not naturalize and require maintenance or

cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates.

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrological conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. This measure will also reduce impacts to oak titmouse by generally controlling the invasion of open space area by Argentine ants, although complete eradication of the ant from riparian areas is not feasible.

BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants would occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the oak titmouse would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

FRINGED MYOTIS (CALIFORNIA SPECIAL ANIMAL)

Life History

The fringed myotis (*Myotis thysanodes*) is widespread throughout the western United States, southern British Columbia, Canada, Mexico, and Central America (O'Farrell and Studier 1980). There are three subspecies of the fringed myotis: *M. t. thysanodes*, which has by far the largest range in the western United States; *M. t. aztecus*, which occurs only in southern Mexico; and *M. t. pahasapensis*, which occurs in a disjunct area comprising parts of eastern Wyoming, northeastern Colorado, southwestern South Dakota, and western Nebraska (Hall 1981). In California, the CNDDB (CDFG 2007A) contains 73 records for this species. Most records are in central and northern California, but 11 of the records are from counties in southern California: San Bernardino (five records); San Diego (three records); and one record each in Los Angeles, Riverside, and Ventura counties.

The fringed myotis typically occurs in a wide variety of desert, grass, and woodland habitats at middle elevations of 1,200 to 2,850 meters (3,937 to 9,350 feet) but is known from lower elevations along the west coast and may occur in pine–fir associations at higher elevations (O'Farrell and Studier 1980). Individuals observed in desert/steppe habitats were within a one-hour flight of forest and riparian habitats (O'Farrell and Studier 1980).

During their most active season (April through September), fringed myotis leave their roosts at sundown and forage for small beetles, which comprise about 73% of their diet, in the vegetation canopy (O'Farrell and Studier 1980). They return to the roost by daylight.

Females establish maternity colonies in late April in caves, tunnels, mines, and buildings where young are born and raised. Males establish solitary roost areas during the breeding season. Females leave by late September and probably migrate or disperse to winter hibernacula (Wilson and Ruff 1999). Young are born in late June to early July (O'Farrell and Studier 1980). Young develop rapidly, with flight occurring by 16 days of age, and are fully developed by 20 to 21 days.

The fringed myotis is sensitive to disturbance of roost sites by humans, potentially resulting in abandonment (O'Farrell and Studier 1980; Wilson and Ruff 1999). Such disturbances could also disrupt the interaction of females and young, such as females failing to retrieve young that have fallen from the neonate cluster, which can result in mortality of the young. Other plausible threats to fringed myotis resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include pet, stray, and feral animals' disturbances of roost sites; roost site and foraging habitat degradation, such as trampling and invasive species; and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered through the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

There was one acoustic detection of the fringed myotis in the 2004 surveys, and there were no acoustic detections or captures of the species in the 2006 surveys. The 2004 detection of the fringed myotis (Impact Sciences 2005) was in coast live oak habitat, which is consistent with the known habitat association for this species. However, because there was only one detection in total and, as noted above, the distance range for detecting this species is relatively small, it is not possible to refine the habitats potentially used by this species in the Project area. For this reason, and because the fringed myotis is known to use a variety of habitats throughout its range, it is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats shows impacts to all vegetation communities because the fringed myotis is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The fringed myotis forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitats for the fringed myotis would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the fringed myotis on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Fringed myotis are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect fringed myotis in areas adjacent to construction zones. There is no evidence of existing fringed myotis day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause fringed myotis to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the fringed myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;

- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different than Alternative 2, Alternative 4 would be marginally less and Alternative 6 marginally greater, Alternative 5 would be somewhat greater, and Alternative 7 would be somewhat less. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternative 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the fringed myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara

River and other changes in the Project footprint under Alternative 7 that reduce impacts to fringed myotis suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the fringed myotis occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the fringed myotis:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the fringed myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual fringed myotis as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the

relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual fringed myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual fringed myotis due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to fringed myotis: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals and roosting sites and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, the fringed myotis is very sensitive to disturbances and may permanently abandon roost sites. In addition, disturbances may cause females to fail to retrieve young that have fallen from the neonate cluster, which can result in mortality of the young. If individuals, including adults and young, are flushed from a day roost during construction they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat result from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the

foraging behavior of the fringed myotis in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the fringed myotis in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the fringed myotis. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in, or adjacent to, open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the fringed myotis are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-150 IMPACTS TO INDIVIDUALS – FRINGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to fringed myotis individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to fringed myotis individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to fringed myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-151 LOSS OF HABITAT – FRINGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the fringed myotis. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the fringed myotis and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the fringed myotis. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the fringed myotis.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the fringed myotis because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the fringed myotis and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the fringed myotis that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for fringed myotis would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-152 SECONDARY IMPACTS – FRINGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of fringed myotis. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect fringed myotis roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, as described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to fringed myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

LONG-LEGGED MYOTIS (CALIFORNIA SPECIAL ANIMAL)

Life History

The long-legged myotis (*Myotis volans*) is widespread throughout western North America, from extreme southeastern Alaska and western Canada (British Columbia and Alberta) south into Baja California and central Mexico (Hall 1981). In the United States, it occurs in all states in the zone west of North Dakota to the north and Texas on the south, and its range includes the far western portions of North and South Dakota, Nebraska, and Texas. In California, it occurs throughout the state except for the Central Valley, eastern Lassen and Modoc counties, and the non-mountainous regions of the Mojave and Colorado deserts (Zeiner *et al*. 1990B). For California, the CNDDB (CDFG 2007A) contains 110 records for this species that are scattered throughout suitable habitat areas in the state. Most records are in central and northern California, with nine records from counties in southern California: San Bernardino (six records), Los Angeles (two records), and San Diego (one record).

The long-legged myotis is a yearlong resident of California and primarily occurs in coniferous forests, but it also uses riparian and oak woodland habitats for roosting and foraging (Warner and Czaplewski 1984; Wilson and Ruff 1999; Zeiner *et al*. 1990B). Day roosts during warmer months typically are in hollow trees and under the bark of exfoliating trees (Zeiner *et al*. 1990B) but also include abandoned buildings, cracks in the ground, and crevices in canyons and cliff faces (Warner and Czaplewski 1984). Johnson *et al.* (2007) found that the long-legged myotis in a forested region of north-central Idaho used snags for roosts located mid-slope. This species uses caves and tunnels as winter hibernation areas, indicating local seasonal migrations. In addition to using forests and woodlands, the long-legged myotis also forages in coastal scrub, chaparral, and desert habitat (Zeiner *et al.* 1990B). Johnson *et al.* (2007) suggest that habitat selection is a function of preferred prey availability. Long-legged myotis occur at elevations ranging from 60 to 3,770 meters (197 to 12,370 feet) but are most commonly found at 2,000 to 3,000 meters (6,560 to 9,840 feet).

Long-legged myotis appear to be opportunistic feeders, foraging both within and above the forest canopy and congregating with other bat species at areas of high insect concentrations (Zeiner *et al.* 1990B). They may be moth specialists, but they also feed on a variety of insects, including true flies, gnats, midges, mosquitoes, termites, true bugs, leafhoppers, ants, bees, wasps, lacewings, and beetles. They are active throughout the night, with a peak of foraging activity three to four hours after dark (Warner and Czaplewski 1984).

Large maternity colonies of several hundred individuals are formed in day roosts (Zeiner *et al.* 1990B). Timing of births is variable and occurs from May to August, possibly in relation to climate (Czaplewski 1984). Young have been observed flying by mid-July (Zeiner *et al.* 1990B).

No documented threats to long-legged myotis colonies have been reported in the scientific literature, but, like most bats, this species is likely very sensitive to human disturbance and because it may also roost in abandoned buildings, it is vulnerable to vandalism, extermination, or inadvertent disturbance of roost sites. Other plausible threats to long-legged myotis resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include disturbance of roost sites by humans and pet, stray, and feral animals; roost site and foraging habitat degradation, such as by trampling and invasive species; and pesticides, which may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006) **Figure 4.5-131** shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered throughout the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The presence of the long-legged myotis was not confirmed in the Project area during the acoustic and mist netting surveys conducted in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, bats with acoustic signatures in the 40 kHz range, which is the range for the long-legged myotis, were detected on site in 2004 and 2006. Impact Sciences (2005) identified the 40 kHz frequency-range species in 2004 as the western small-footed myotis, but without additional information (*e.g.*, longer time-series recording or capture), this identification could not be confirmed. Based on the frequency data alone, the 40 kHz species could be western small-footed myotis, long-legged myotis, or little brown bat; therefore, all three species should be considered to be potentially present on site. In 2006, 40 kHz bat species were recorded in all three survey locations along Potrero Creek, along the Santa Clara River at Walcott Road, and at the plant nursery site in upper Long Canyon.

Although the Project area does not have prime habitat for the long-legged myotis (coniferous forests at high elevations), the species could roost on site in riparian and woodland habitats and buildings and could forage in all habitats throughout the Project area. For this reason, this species is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush

scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats, shows impacts to all vegetation communities because the long-legged myotis is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The long-legged myotis forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the

species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitats for the long-legged myotis would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the long-legged myotis on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Long-legged myotis are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP

would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect long-legged myotis in areas adjacent to construction zones. There is no evidence of existing long-legged myotis day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause long-legged myotis to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reasons described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the long-legged myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;
- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different than Alternative 2, Alternative 4 would be marginally less and Alternative 6 marginally greater, Alternative 5 would be somewhat greater, and Alternative 7 would be somewhat less. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, these impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for the long-legged myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (218.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other changes in the Project footprint under Alternative 7 that reduce impacts to long-legged myotis suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the long-legged myotis occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the long-legged myotis:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;

- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the long-legged myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual long-legged myotis as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The impacts to individual long-legged myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2, because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual long-legged myotis due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to long-legged myotis: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals, roosting sites, and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon disturbed roost sites. If individuals, including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the long-legged myotis in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the long-legged myotis in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the long-legged myotis. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined necessary. Potential long-term effects of development include lighting, increased human activity, and pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base of the long-legged myotis. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human

activities in open space areas where bats may roost, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an IPM plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the long-legged myotis are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-153 IMPACTS TO INDIVIDUALS – LONG-LEGGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to long-legged myotis individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to long-legged myotis individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings

with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to long-legged myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-154 LOSS OF HABITAT – LONG-LEGGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the long-legged myotis. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the long-legged myotis and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the long-legged myotis. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the long-legged myotis.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the long-legged myotis because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the long-legged myotis and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the long-legged myotis that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for long-legged myotis would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-155 SECONDARY IMPACTS – LONG-LEGGED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of the long-legged myotis. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect long-legged myotis roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e*., a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to long-legged myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7

WESTERN SMALL-FOOTED MYOTIS (CALIFORNIA SPECIAL ANIMAL)

Life History

The western small-footed myotis (*Myotis ciliolabrum*) is widespread throughout western North America, from western Canada south through the western United States to northern Baja California and central Mexico (Hall 1981). In the United States, the species occurs in all states west of, and including, North Dakota to the north and Texas to the south. The species is absent from the coastal regions of Washington, Oregon, and California south to about Ventura County (Zeiner *et al.* 1990B). In California, it occurs in coastal southern California, the foothills of the Sierra Nevada, and the Great Basin Desert, and it is absent from the higher elevations in the mountains and from the lower elevations in the Mojave and Colorado deserts (Zeiner *et al.* 1990B). In California, the CNDDB (CDFG 2007A) contains 39 records for this species that are scattered throughout the state. Eight of the records are from counties in southern California: San Bernardino (three records); Los Angeles (two records); and one record each in Imperial, San Diego, and Ventura counties.

The western small-footed myotis occurs in a wide variety of arid upland habitats at elevations ranging from sea level to 2,700 meters (8,860 feet) (Zeiner *et al.* 1990B). Habitats used by this species include riparian areas, woodlands, and brushy uplands (Holloway and Barclay 2001; Zeiner *et al.* 1990B). Western small-footed myotis day roosts include rock crevices, caves, tunnels and mines, and, sometimes, buildings and abandoned swallow nests (Holloway and Barclay 2001). They also use day roosts as nocturnal roosts (*i.e.*, they may return to the day roost during the night) or may use buildings and concrete underpasses strictly as nocturnal roosts (Holloway and Barclay 2001).

Western small-footed myotis forage for moths, true flies, gnats, midges, mosquitoes, true bugs, and beetles, often along the margins of trees and over water (Zeiner *et al.* 1990B).

Females establish maternity roosts, which may be solitary or colonial (with up to 20 individuals), where young are born and raised (Zeiner *et al.* 1990B). Males appear to establish solitary roosts during the breeding season (Zeiner *et al.* 1990B). Births generally occur in May and June, with a peak in late May (Zeiner *et al.* 1990B), and first flight by young occurs by about one month (Wilson and Ruff 1999).

No documented threats to western small-footed myotis colonies have been reported in the scientific literature, but, like most bats, this species is likely very sensitive to human disturbance and because it may roost in abandoned buildings and under bridges (nocturnal roosts), it is vulnerable to vandalism, extermination, or inadvertent disturbance of roost sites. Other plausible threats to western small-footed myotis resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term impacts from urban development also include human and pet, stray, and feral

animals' disturbances of roost sites; roost site and foraging habitat degradation, such as by trampling and invasive species; and pesticides, which may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered throughout the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The presence of the western small-footed myotis was not confirmed in the Project area during the acoustic and mist netting surveys conducted in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, bats with acoustic signatures in the 40 kHz range, which is the range for the western small-footed myotis, were detected on site in 2004 and 2006. Impact Sciences (2005) identified the 40 kHz frequency range species in 2004 as the western small-footed myotis, but without additional information (*e.g.*, longer time-series recording or capture), this identification could not be confirmed because this frequency is characteristic of western small-footed myotis, long-legged myotis, and little brown bat. In 2006, 40 kHz bat species were recorded in all three survey locations along Potrero Creek, along the Santa Clara River at Walcott Road, and at the plant nursery site in upper Long Canyon. Without definitive presence/absence information, for the purpose of this analysis, it is assumed that the western small-footed myotis occurs in the Project area.

Because the western small-footed myotis is a habitat generalist, it could forage in all habitats throughout the Project area. For this reason, and because the western small-footed myotis is known to use a variety of habitats throughout its range, it is assumed to potentially use most of the natural vegetation communities on site, including alluvial scrub, arrow weed scrub, bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, river wash, big sagebrush scrub, California sagebrush scrub, coyote brush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, California annual grassland, *Eriodictyon* scrub, purple needlegrass, coast live oak woodland, valley oak woodland, valley oak/grass, and California walnut woodland. A total of 11,466 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 207 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.8% of these communities on site. **Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats, shows impacts to all vegetation communities because the western small-footed myotis is a foraging habitat generalist and thus potentially forages throughout the Project area. A total of 118 acres would be temporarily impacted.

The western small-footed myotis forages in a broad variety of habitats that comprise more than 11,000 acres in the Project area. The construction of RMDP facilities would be phased over a long period of time and thousands of acres of suitable foraging habitat in the River Corridor SMA, High Country SMA, and Salt Creek area would be available for this species at any given time. Therefore, the permanent loss of 207 acres of foraging habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available foraging habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. Therefore, these permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 3,161 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 27.6% of suitable habitat on site (**Figure 4.5-72**, Alternative 2 Impacts to General Wildlife Habitats).

A relatively large amount and percentage of on-site roosting and foraging habitat for the western small-footed myotis would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 27.6% of currently occupied habitat, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,367 acres (29.4%). Because of the large amount and percentage of habitat loss, the combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on the distribution of the western small-footed myotis on site, thus substantially reducing its numbers and restricting its range on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Western small-footed myotis are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this

occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect western small-footed myotis in areas adjacent to construction zones. There is no evidence of existing western small-footed myotis day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause western small-footed myotis to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reasons described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for the western small-footed myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 185 acres (1.6%) of permanent loss and 132 acres of temporary loss;
- Alternative 4 – 180 acres (1.6%) of permanent loss and 115 acres of temporary loss;
- Alternative 5 – 212 acres (1.8%) of permanent loss and 141 acres of temporary loss;
- Alternative 6 – 211 acres (1.8%) of permanent loss and 136 acres of temporary loss; and
- Alternative 7 – 82 acres (0.7%) of permanent loss and 190 acres of temporary loss.

Compared to Alternative 2, which would result in 207 acres (1.8%) of permanent loss and 118 acres of temporary impacts, the combined direct permanent and temporary loss of foraging habitat under Alternative 3 would not be substantially different than Alternative 2, Alternative 4 would be marginally less and Alternative 6 marginally greater, Alternative 5 would be somewhat greater, and Alternative 7 would be somewhat less. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar in magnitude compared to Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the western small-footed myotis (**Figures 4.5-73** through **4.5-77**, Alternatives 3 through 7 Impacts to General Wildlife Habitats):

- Alternative 3 – 2,949 acres (25.7%) of permanent loss;
- Alternative 4 – 2,825 acres (24.6%) of permanent loss;
- Alternative 5 – 2,742 acres (23.9%) of permanent loss;
- Alternative 6 – 2,423 acres (21.1%) of permanent loss; and
- Alternative 7 – 2,128 acres (18.6%) of permanent loss.

Compared to Alternative 2, which would result in 3,161 acres (27.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other changes in the Project footprint under Alternative 7 that reduce impacts to western small-footed myotis suitable habitat compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the western small-footed myotis occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the western small-footed myotis:

- Alternative 3 – 3,134 acres (27.3%) of permanent loss;
- Alternative 4 – 3,005 acres (26.2%) of permanent loss;
- Alternative 5 – 2,953 acres (25.8%) of permanent loss;
- Alternative 6 – 2,633 acres (23.0%) of permanent loss; and
- Alternative 7 – 2,210 acres (19.3%) of permanent loss.

Compared to Alternative 2, which would result in 3,367 acres (29.4%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed

under Alternatives 4 through 7, there would be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7, and there would be additional pullbacks from the Santa Clara River and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for the western small-footed myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual western small-footed myotis as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual western small-footed myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual western small-footed myotis due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to western small-footed myotis: (1) impacts to individuals; (2) loss of roosting and foraging habitat; and (3) secondary impacts to individuals, roosting sites, and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon disturbed roost sites. If individuals,

including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

The combined permanent loss of foraging habitat resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 2,210 acres (19.3%) under Alternative 7 to 3,367 acres (29.4%) under Alternative 2. This would be a substantial loss of suitable foraging habitat and will alter the foraging behavior of the western small-footed myotis in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable foraging habitat to support the western small-footed myotis in the Project vicinity. Implementation of these mitigation measures will result in protection and management of approximately 6,250 acres of suitable foraging habitat, as well as potential roosting sites, for the western small-footed myotis. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**).

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined necessary. Potential long-term effects of development include lighting, increased human activity, and pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base of the western small-footed myotis. The large open space system will provide adequate areas for roosting and foraging that will in part offset these impacts. Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including homeowner education and restrictions on recreational activities. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an IPM plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the western small-footed myotis are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-156 IMPACTS TO INDIVIDUALS – WESTERN SMALL-FOOTED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to western small-footed myotis individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to western small-footed myotis individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to western small-footed myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-157 LOSS OF HABITAT – WESTERN SMALL-FOOTED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate for the permanent loss of habitat for the western small-footed myotis. These mitigation measures primarily relate to the establishment and management of a large open space system that will provide adequate suitable roosting and foraging habitat to support the western small-footed myotis and allow for its persistence in the Project area.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the western small-footed myotis. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the western small-footed myotis.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the western small-footed myotis because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and that oak tree replacement occur as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak

resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the western small-footed myotis and also will provide potential roost sites.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures to mitigate for the loss of habitat for the western small-footed myotis that relate to the establishment and management of a large open space system.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for western small-footed myotis would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-158 SECONDARY IMPACTS – WESTERN SMALL-FOOTED MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of the western small-footed myotis. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect western small-footed myotis roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to western small-footed myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

YUMA MYOTIS (CALIFORNIA SPECIAL ANIMAL)

Life History

The Yuma myotis (*Myotis yumanensis*) is widespread throughout western North America from British Columbia, Canada, south through the western United States to Baja California and central Mexico (Hall 1981). In the United States, the species occurs in all of Washington and Oregon, most of California, western Idaho and Montana, the extreme western portion of Nevada, the southeastern half of Utah, all of Arizona and New Mexico, and western Texas. It occurs throughout California except for the most arid areas of the Mojave and Colorado deserts (Zeiner *et al.* 1990B). The Yuma myotis is a yearlong resident and probably makes local migrations from day roosts used in the warmer months to winter hibernation roosts. The species is absent from areas without water sources because it is not well adapted to desert environments and dehydrates quickly if barred from access to water (Wilson and Ruff 1999). In California, the CNDDB (CDFG 2007A) contains 200 records for this species that are from throughout the state. Thirty-six of the records are from counties in southern California: San Diego (15 records), San Bernardino (eight records), Los Angeles (five records), Riverside (four records), and two records each from Imperial and Orange counties.

Although the Yuma myotis occurs in a wide variety of life zones at elevations ranging from sea level to 3,300 meters (10,820 feet), its actual distribution is closely associated with access to water (Zeiner *et al.* 1990B). Forests and woodlands are primary habitats, and foraging usually occurs within open, uncluttered habitats and occurs low, over water sources such as ponds, streams, and stock ponds (Brigham *et al*. 1992; Zeiner *et al.* 1990B). Yuma myotis day roosts include rock crevices; caves; mines; buildings; abandoned swallow nests; and large, live trees (Evelyn *et al*. 2004; Zeiner *et al.* 1990B).

The Yuma myotis typically forages over water sources for moths, true flies, gnats, midges, mosquitoes, termites, true bugs, caddisflies, ants, bees, and wasps (Brigham *et al*. 1992).

Females establish colonial maternity roosts with up to several thousand individuals where young are born and raised (Zeiner *et al.* 1990B). Males appear to establish solitary roosts during the breeding season or roost with other bat species (Wilson and Ruff 1999; Zeiner *et al.* 1990B). Births are variable, but generally occur in late May to mid-June, with a peak in early June in California (NatureServe 2007; Zeiner *et al.* 1990B). Time of first flight is unknown.

No documented threats to Yuma myotis colonies have been reported in the scientific literature, but, like most bats, this species is likely very sensitive to human disturbance and, because it may roost in large trees, abandoned buildings, and under bridges (nocturnal roosts), it is vulnerable to vandalism, extermination, or inadvertent disturbance of roost sites. Other plausible threats to Yuma myotis resulting from construction activities include disturbances of day roosts from human activity, noise, and dust, as well as effects of dust on insect prey. Potential long-term

impacts from urban development also include human and pet, stray, and feral animals' disturbances of roost sites; roost site and foraging habitat degradation, such as trampling and invasive species; and pesticides that may cause secondary poisoning and affect prey abundance.

Survey Results

Two focused bat surveys have been conducted in the Project area. Impact Sciences (2005) conducted acoustic surveys using the Anabat II Bat Detector in 2004 and conducted surveys using both the Anabat detector and mist netting in 2006 (Johnson 2006).

Figure 4.5-131 shows the 25 survey locations from 2004 and the six survey locations from 2006 (Impact Sciences 2005; Johnson 2006). The 2004 surveys were scattered through the Project area as well as in two locations on the Legacy Village site. The 2006 surveys were more concentrated, with three locations in Potrero Canyon, two locations along the Santa Clara River, and one location in upper Long Canyon.

The presence of the Yuma myotis was confirmed in the Project area through capture at The Old Road and I-5 survey site in 2006 (Johnson 2006). Its potential presence was also acoustically recorded in middle Potrero Creek and at the plant nursery site in upper Long Canyon in 2006. Bats with acoustic signatures in the 50 kHz range, which is the range for the Yuma myotis, were detected on site in 2004 and 2006. Impact Sciences (2005) identified the 50 kHz frequency-range species in 2004 as the California myotis, but without additional information (*e.g.*, longer time-series recording or capture), this identification could not be confirmed. Based on the frequency data alone, the 50 kHz species could be Yuma myotis or California myotis; therefore, both species are considered to be potentially present on site.

The Yuma myotis is assumed to potentially use the riparian and wetland vegetation communities on site most closely associated with perennial water sources, including bulrush–cattail wetland, cismontane alkali marsh, southern cottonwood–willow riparian, Mexican elderberry, giant reed, coastal and valley freshwater marsh, herbaceous wetland, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, big sagebrush scrub, big sagebrush–California buckwheat, and arrow weed scrub. A total of 732 acres of suitable habitat is present in the Project area.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 67 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 9.2% of these communities on site (**Figure 4.5-54,** Impacts to Riparian/Wetland Wildlife Habitat). A total of 57 acres would be temporarily impacted.

The Yuma myotis forages in a variety of riparian and wetland habitats. The construction of RMDP facilities would be phased over a long period of time and hundreds of acres of suitable riparian and wetland habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. The permanent loss of 67 acres of habitat and temporary impacts that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction of RMDP facilities. At the completion of temporary disturbances, these areas would be restored. These permanent and temporary impacts would not have a substantial direct adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 17 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 2.3% of these communities on site (**Figure 4.5-54,** Impacts to Riparian/Wetland Wildlife Habitat).

The Yuma myotis forages in a variety of riparian associated habitats and at least 560 acres of habitat for this species would be protected as open space following build-out, primarily in the River Corridor SMA (516 acres). In addition, restoration, revegetation, and enhancement of riparian habitat in the River Corridor would ensure no net loss of acreage and function. The permanent loss of 17 acres of habitat that would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas therefore would

not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 84 acres (11.5%). Because the Yuma myotis forages in a variety of riparian-associated habitat, and because the construction activities would be phased over a long period of time, hundreds of acres of suitable riparian habitat in the River Corridor SMA and associated tributaries would be available for this species at any given time. Restoration, revegetation, and enhancement of riparian habitat in the River Corridor would ensure no net loss of acreage and function. Therefore, the permanent loss of 84 acres of habitat that would occur as a result of construction and/or grading activities would not substantially reduce the available habitat for this species during construction. These impacts would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species rangewide; interfere with the movement of the species between important habitat areas; cause the species to drop below self-sustaining levels rangewide; threaten to eliminate the species rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Yuma myotis are highly mobile, and it is unlikely that the proposed Project would result in direct mortality of adults occupying this habitat during construction and/or grading activities. However, if adults are flushed from a day roost site during construction activities, these individuals could become disoriented and unable to safely relocate to another roost site, resulting in an increased risk of injury or mortality. In addition, if construction activities directly impacted a colonial maternity site, young could be harassed, injured, or killed. Furthermore, even if young escaped direct harm, the loss of a maternity site resulting from the implementation of the RMDP before young are independent of the mother likely would result in injury or mortality of the young due to their likely inability to safely relocate to another roost site. Implementation of the SCP would not directly impact this species. If a day roost site were established prior to

construction activities in the Project footprint, direct impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct permanent impacts to individuals. If a day roost site were established prior to construction activities in the Project footprint, impacts to the roost site would result in a substantial adverse effect on a special-status species (significance criterion 1). If this occurred, indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Construction activities associated with RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas have the potential to affect Yuma myotis in areas adjacent to construction zones. There is no evidence of existing Yuma myotis day roost sites, including maternity sites, in the Project area, based on focused bat surveys in 2004 and 2006 (Impact Sciences 2005; Johnson 2006). However, if a day roost site were established prior to construction activities in proximity to the construction zones, both short-term secondary impacts associated with construction activities and long-term secondary impacts to a roost site could occur. As noted above, increased human activity, noise, and dust associated with construction activities could cause Yuma myotis to abandon day roosts, exposing both adults and young to injury and mortality due to their likely inability to safely relocate to another day roost. Although bats are highly mobile and could alter their foraging behavior to avoid construction areas, construction-generated dust may adversely affect foraging habitat by reducing their insect prey. Lighting in construction areas may also alter foraging behavior due to changing the distribution of insect prey attracted to lights and potentially causing increased competition among bats.

Long-term impacts of RMDP facilities and build-out of the Specific Plan, VCC, and Entrada planning areas would also increase potential secondary impacts through increased human activity, noise, and lighting for the same reason described above for construction impacts, but over the long term. Use of pesticides for agriculture or in landscaped areas may result in secondary poisoning and reduction of prey. Pet, stray, and feral cats and dogs may disturb roost sites.

Both short-term and long-term secondary impacts to a roost site and impacts to foraging bats would result in a substantial adverse effect on a special-status species (significance criterion 1) and would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the Yuma myotis (**Figures 4.5-55** through **4.5-59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 47 acres (6.4%) of permanent loss and 58 acres of temporary loss;
- Alternative 4 – 48 acres (6.5%) of permanent loss and 54 acres of temporary loss;
- Alternative 5 – 54 acres (7.4%) of permanent loss and 62 acres of temporary loss;
- Alternative 6 – 42 acres (5.7%) of permanent loss and 56 acres of temporary loss; and
- Alternative 7 – 9.4 acres (1.3%) of permanent loss and 39 acres of temporary loss.

Compared to Alternative 2, which would result in 67 acres (9.2%) of permanent loss and 57 acres of temporary impacts, the combined direct permanent and temporary loss of habitat under Alternatives 3 through 7 would range from somewhat reduced (Alternative 5) to substantially reduced (Alternative 7). The substantial reduction in direct permanent and temporary impacts under Alternative 7 compared to Alternative 2 is primarily due the exclusion of the Commerce Center Drive Bridge and Potrero Canyon Bridge from the plan; reduced impacts would also occur under Alternative 7 because major tributary drainages would not be re-graded or realigned and bank stabilization would be constructed outside the 100-year floodplains of these drainages. Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 6 would be reduced but similar in magnitude compared to Alternative 2 and substantially reduced under Alternative 7, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the Yuma myotis (**Figures 4.5-55** through **59**, Alternatives 3 through 7 Impacts to Riparian/Wetland Wildlife Habitat):

- Alternative 3 – 12 acres (1.7%) of permanent loss;
- Alternative 4 – 9.3 acres (1.3%) of permanent loss;

- Alternative 5 – 5.6 acres (0.8%) of permanent loss;
- Alternative 6 – 2.6 acres (0.4%) of permanent loss; and
- Alternative 7 – 1.3 acres (0.2%) of permanent loss.

Compared to Alternative 2, which would result in 17 acres (2.3%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed, and each alternative would have successively smaller development footprints within the Specific Plan and/or Entrada planning areas. Alternative 7 would have the least impact because there would be additional pullbacks from the Santa Clara River and other changes in the Project footprint that reduce impacts to Yuma myotis suitable habitat compared to the other alternatives. Because the overall loss of habitat from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 6 is reduced but not substantially different than Alternative 2, and substantially reduced under Alternative 7, these impacts would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the Yuma myotis:

- Alternative 3 – 59 acres (8.1%) of permanent loss;
- Alternative 4 – 57 acres (7.8%) of permanent loss;
- Alternative 5 – 60 acres (8.2%) of permanent loss;
- Alternative 6 – 44 acres (6.1%) of permanent loss; and
- Alternative 7 – 10.6 acres (1.5%) of permanent loss.

Compared to Alternative 2, which would result in 84 acres (11.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above for the discussions of direct and indirect impacts. These reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, there would be successive reductions in the development footprints in the Specific Plan and/or Entrada planning areas, and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 compared to Alternatives 2 through 6. The relatively small combined direct and indirect permanent loss of habitat as a result of

construction/grading activities would not have a substantial adverse effect on this species; interfere substantially with the movement of the species or impede the use of a native nursery site; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species on site or rangewide. Combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant for Alternatives 3 through 7.

Impacts to Individuals

The potential for impacts to individual Yuma myotis as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Impacts to individual Yuma myotis occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity; dust; noise (from construction and traffic on roads and bridges); pet, stray, and feral cats and dogs; pesticides; and lighting. The loss or degradation of suitable habitat and impacts to individual Yuma myotis due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to Yuma myotis: (1) impacts to individuals; and (2) secondary impacts to individuals, roosting sites, and foraging habitat outside the Project footprint.

Impacts to individuals could occur if day roosting sites are disturbed during construction as a result of increased human activity, noise, dust, and lighting. As noted above, bats are very sensitive to disturbances and may permanently abandon disturbed roost sites. If individuals,

including adults and young, are flushed from a day roost during construction, they would likely become disoriented and unable to safely relocate to another roost, resulting in increased risk of injury or mortality. In order to avoid, minimize, and mitigate these impacts, the applicant will conduct pre-construction surveys for active bat roost sites and postpone work within 300 feet of any active maternity roost until young have fledged, and will create alternative roost sites to mitigate for any roost sites disturbed during construction, including creation of roosts under bridges and in culverts, where practicable, in consultation with CDFG.

With respect to secondary effects, bats are very sensitive to disturbances and thus roost sites outside of the construction zone could be adversely affected during construction due to increased human activity, dust, noise, and lighting. Dust may also affect their insect prey base. Impacts to active maternity sites in or within 300 feet of construction zones will be avoided until young have fledged, as noted above. Construction-generated dust will be controlled using standard measures such as chemical suppression and screening fencing where determined to be necessary. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs, which may cause roost abandonment; and use of pesticides, which may cause secondary poisoning or affect the prey base. The primary mitigation for these long-term effects is the preservation of a large open space system that will provide suitable foraging habitat to support the Yuma myotis in the Project vicinity. Implementation of Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in protection and management of approximately 562 acres of suitable foraging habitat, as well as potential roosting sites, for the Yuma myotis. This habitat will be conserved within three main interconnected open space areas totaling approximately 6,300 acres: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Several specific mitigation measures will also be implemented to control human activities in open space areas where bats may roost, including restrictions on recreational activities and homeowner education. Pet, stray, and feral cats and dogs will be leashed or otherwise controlled in or adjacent to open space areas. All lighting along the edge of natural habitat areas will be downcast. Pesticides will be controlled through an integrated pest management (IPM) plan. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

The specific mitigation measures for the Yuma myotis are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-159 IMPACTS TO INDIVIDUALS – YUMA MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR did not identify mitigation measures to avoid, minimize, or mitigate impacts to Yuma myotis individuals.

Measures Recommended by EIS/EIR

This EIS/EIR recommends three mitigation measures to reduce impacts to Yuma myotis individuals. These mitigation measures primarily are designed to avoid impacts to active day roosts.

BIO-61 requires a pre-construction survey to determine if active roosts of special-status bats are present within 300 feet of the Project disturbance boundaries. If an active maternity roost is found, all work within 300 feet shall be postponed until the roost is vacated and juveniles have fledged. If a maternity roost is impacted, substitute roosting habitat shall be provided. Non-breeding bat hibernacula shall be vacated the evening between initial disturbance and clearing and grading activities.

BIO-68 requires creation of artificial roost sites to mitigate day roost sites found during pre-construction surveys conducted per BIO-61.

BIO-84 states that the culvert and bridge designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area.

BIO-52 will also be implemented as a general measure to avoid and minimize impacts to general wildlife during construction, including bats. BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to Yuma myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-160 SECONDARY IMPACTS – YUMA MYOTIS

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Secondary impacts during construction include increased human activity, dust, noise, and lighting. Dust may also affect the insect prey base of Yuma myotis. Potential long-term effects of development include lighting; increased human activity; pet, stray, and feral cats and dogs that may disturb roost sites; and use of pesticides.

Previously Incorporated Measures

The following mitigation measures describe preservation, restoration and enhancement, and management that will result in a large open space system that will provide suitable foraging habitat and potential roosting habitat for the Yuma myotis.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration and management of the River Corridor SMA, which is an important foraging habitat resource for the Yuma myotis. These measures provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects and will provide potential roosting and adequate foraging habitat in the Project area for the Yuma myotis.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA. This measure will help enhance foraging habitat quality for the Yuma myotis because insect diversity and abundance would be enhanced.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA are the same as required for the River Corridor SMA and oak tree replacement occurs as described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and

specifications shall follow County oak tree guidelines. This measure will help enhance foraging habitat quality for the Yuma myotis and also will provide potential roost sites.

The Newhall Ranch Specific Plan Program EIR also identified Mitigation Measure SP-4.6-56 to control lighting in natural areas that could affect Yuma myotis roosting and foraging behavior. This measure requires that all lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends several additional mitigation measures that relate to the establishment and management of a large open space system that will provide foraging habitat and potential roosting habitat for the Yuma myotis.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

This EIS/EIR also recommends several specific mitigation measures to reduce short-term and long-term secondary impacts to roost sites to a level that is adverse but not significant. BIO-61 and BIO-68, described above, will mitigate for short-term construction-related disturbance and human activity. BIO-61, BIO-68, and BIO-84, described above, will also mitigate for the impacts from long-term disturbance associated with roads, bridges, lighting, and human activity.

BIO-63 requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

BIO-64 will be implemented to prevent poisoning and loss of prey from pesticides and requires preparation of an IPM plan addressing the use of pesticides on site prior to the issuance of building permits.

BIO-71 will be implemented to control for construction-related dust impacts to special-status species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to Yuma myotis individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

AMERICAN BLACK BEAR (CDFG TRUST RESOURCE)

Life History

The American black bear (*Ursus americanus*) (black bear) is widespread throughout much of Canada and the mountainous regions of the western contiguous United States as well as much of Alaska; virtually all of the central, southern, and eastern forested regions of the United States; and south into Mexico (Hall 1981). It is absent from the grassland and agricultural regions of the Midwest and mideastern United States (NatureServe 2007). As of 1996, the black bear's global status was considered secure, including within California (NatureServe 2007). The black bear's abundance and distribution have increased in the northeastern United States, expanding back into its former range in western Oklahoma, northwestern Texas, and southwestern Kansas in the 1980s and 1990s (NatureServe 2007). Within California, it occurs in the Sierra Nevada and Cascade ranges, in the forested regions of northern California, and in the Transverse and Peninsular ranges of southern California south to the San Jacinto range in western Riverside County (Zeiner *et al.* 1990B). Recent sightings in San Diego County suggest that the species is expanding its range to the south (SDNHM 2007).

The black bear is found in dense, mature stands of a variety of forest habitats. It can utilize valley foothill riparian forests, wet meadows, and brushy stands of forests. Bears require large trees and hollow logs, hollow bases of trees, snags, or stumps for cover and hibernation. They may also den in caves or crevices, under roots, or in holes dug in the ground (Reid 1990). Black bears are opportunistic omnivores, and their diet is based on seasonal availability. In the spring, they normally eat grasses, forbs, and bird eggs; in the summer, they feed on insects and fruits; and in the fall, they feed on acorns and other nuts and fruits (Reid 1990; Zeiner *et al.* 1990B). They also graze on trees and shrubs, feed on fish and carrion, and more recently, commonly forage on human refuse as urban development encroaches into their habitat. They require available drinking water when not in hibernation but may also feed on succulent plants as a source of water. Where food resources are scattered and/or scarce, black bears are solitary and tend to spread out across the landscape (Wilson and Ruff 1999).

Litters of one to six cubs are born while the female is in hibernation, usually in January and February. However, in southern California bears may be active year-round, depending on weather conditions and available food resources. Cubs are weaned in the summer at about six months of age but stay with the mother until one to 1.5 years of age (Reid 1990; Zeiner *et al.* 1990B). Female offspring remain in their mothers' territories until adulthood, and male offspring disperse at one to four years of age and may travel as far as 136 miles, with an average dispersal of 38 miles (NatureServe 2007; Wilson and Ruff 1999). Black bears are capable of moving across a variety of terrains during dispersal; only large bodies of water, major urban areas, and very rugged alpine ridges are considered to be major obstacles to movement (NatureServe 2007). Black bears use undercrossings of various dimensions. For example, in Banff National Park,

Alberta, Canada, black bears used 10 of 11 monitored underpasses that ranged in size from 4.2 to 13.4 meters (13.8 to 43.9 feet) in width, 2.5 to 4.0 meters (8.2 to 13.1 feet) in height, and 25.6 to 97.1 meters (83.9 to 318.6 feet) in length, as well as at noise levels ranging from 63.8 to 70.5 dBA (Clevenger and Waltho 2000).

The black bear is protected in national parks, wilderness areas, and wildlife refuges but is at risk of local extirpation in many locales (NatureServe 2007). The primary threat to the black bear in unprotected areas is loss of habitat and increasing encounters with humans along wildland–urban edges. Black bears are highly adaptable to human development, where they are often attracted by food, which brings them into greater contact with humans (Wilson and Ruff 1999). More than 90% of deaths of black bears older than 1.5 years are from anthropogenic causes, including gunshots, trapping, vehicle collisions, and other human sources (Wilson and Ruff 1999).

Survey Results

A mammal assessment and survey for the Specific Plan area was conducted between March 1 and September 30, 2004 (Impact Sciences 2005), but no black bears were documented in this study. Black bear sign (scat and paw prints) was anecdotally observed within High Country SMA in 2005 (Dudek and Associates 2006B). The specific location was not recorded, but it is assumed that black bears use portions of the High Country SMA due to its connection to the Santa Susana Mountains to the south.

Black bears require dense, mature stands of a variety of forest habitats (valley foothill riparian forests, wet meadows, and brushy stands of forests). They also require large trees and hollow logs, hollow bases of trees, snags, or stumps for cover and hibernation. There may be some suitable denning habitat for the black bear in the High Country SMA or Salt Creek area; however, these areas would not be affected by implementation of the RMDP and the SCP or by build-out of the Specific Plan, VCC, or Entrada planning areas. Within the lower elevation areas proposed to be developed, bears may occur occasionally during foraging, movement, and dispersal. Because the areas proposed for development are not regularly used, impacts to suitable habitat for the black bear were not quantified. This species may occasionally use a portion of the Santa Clara River within the Specific Plan area for movement between the Santa Susana Mountains and Santa Monica Mountains to the south and the Los Padres National Forest and Angeles National Forest in the Sierra Madre Mountains to the north.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use

practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Black bears are known to occur in the High Country SMA and to move and disperse through the Project area. Habitat in the RMDP area is not suitable for denning due to a general lack of dense vegetation and cover. Impacts associated with the construction of RMDP facilities therefore would not impact suitable denning habitat for the black bear, but these areas could be used occasionally for foraging and movement. Implementation of the SCP would not directly affect this species. Because this species is still common and widespread in California and much of the United States, has not been directly observed in the development area, and because substantial habitat would remain in the High Country SMA and Salt Creek area following construction of RMDP facilities, direct permanent and temporary impacts (Loss of Habitat) associated with implementation of the RMDP and the SCP would be adverse but not significant.

Indirect Permanent Impacts

Low elevation areas proposed for development in the Project area also do not support suitable denning habitat for the black bear. Its activities in these areas would be limited to occasional foraging, movement, and dispersal, and it is likely that most of its use on the site occur in the more remote areas of the High Country SMA and Salt Creek area that would remain following build-out of the Specific Plan, VCC, and Entrada planning areas. Therefore, indirect permanent impacts associated with the build-out of the Specific Plan, VCC, and Entrada planning areas would not substantially affect suitable habitat for the black bear or substantially affect its use of the Project area such that it could not meet its life history needs. Indirect permanent impacts (Loss of Habitat) associated with build-out of the Specific Plan, VCC, and Entrada planning areas would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

As described above, the lower elevations of the Project area subject to the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas do not support suitable denning habitat for the black bear and its activities on site probably are limited to occasional foraging, movement, and dispersal. Substantial habitat would remain in the High Country SMA and Salt Creek area following construction of RMDP facilities and

build-out. Implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas would not substantially affect this species. The combined direct and indirect permanent impacts on habitat therefore would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Black bears are only expected to occur in the Project area during dispersal between large core habitat areas. Because the black bear is highly mobile, it would be expected to leave/avoid construction zones. It is highly unlikely, therefore, that RMDP-related construction activities would result in direct injury or mortality of individual adult black bears, although there is a small possibility this could occur. Implementation of the SCP would not directly affect this species. Thus, implementation of the RMDP and the SCP would not substantially adversely affect this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Because direct permanent and temporary impacts (Impacts to Individuals) would be very unlikely, they would be adverse but not significant.

Indirect Permanent Impacts

Black bears are only expected to occur in the Project area during dispersal between large core habitat areas. Because the black bear is highly mobile, it would be expected to leave/avoid construction zones. It is highly unlikely, therefore, that build-out of the Specific Plan, VCC, and Entrada planning areas would result in direct injury or mortality of individual adult black bears. Thus, build-out of the Specific Plan, VCC, and Entrada planning areas would not substantially adversely affect this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Because indirect permanent impacts (Impacts to Individuals) would be very unlikely, they would be adverse but not significant.

Secondary Impacts

Increased human activity, nighttime lighting, and noise related to short-term construction activities associated with implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas could alter the dispersal behavior of the black bear between the mountain ranges to the north and south of the Project area. Implementation of the SCP would not

affect this species. Bears could be attracted to trash and garbage and construction waste if left in unsecured containers.

Long-term development-related increases in vehicle traffic, noise, nighttime lighting, and human presence, especially at bridges and road crossings, could alter the movement behavior of the black bear between the mountain ranges to the north and south and could also lead to more frequent adverse encounters with humans and collisions with vehicles. Pet, stray, and feral dogs associated with increased human presence could also harass bears moving through the area.

These short-term and long-term secondary impacts would result in a substantial adverse impact to the habitat use and movement patterns of this species in the Project area (significance criterion 4). Short-term and long-term secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Similar to Alternative 2, Alternatives 3 through 7 would not result in direct permanent or temporary loss of suitable denning habitat for the black bear. Areas affected by the RMDP probably are only occasionally used by black bears for foraging, movement, and dispersal, and loss of habitat in these areas would not substantially affect this species. Substantial habitat would remain in the High Country SMA and Salt Creek area following construction of RMDP facilities. Therefore, direct permanent and temporary impacts (Loss of Habitat) associated with implementation of the RMDP and the SCP would be adverse but not significant for Alternatives 3 through 7.

Indirect Permanent Impacts

Similar to Alternative 2, Alternatives 3 through 7 would not result in indirect permanent loss of suitable denning habitat for the black bear. Areas affected by build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas probably are only occasionally used by black bears for foraging, movement, and dispersal, and loss of habitat in these areas would not substantially affect this species. Substantial habitat would remain in the High Country SMA and Salt Creek area following build-out. Therefore, indirect permanent impacts (Loss of Habitat) resulting from build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be adverse but not significant for Alternatives 3 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be similar to Alternative 2: no impacts to suitable denning habitat for the black bear would occur and areas affected by the RMDP and build-out probably are only occasionally used by black bears for foraging, movement, and dispersal. Substantial habitat would remain in the High Country SMA and Salt Creek area following construction of RMDP facilities and build-out. Therefore, the combined direct and indirect permanent impacts (Loss of Habitat) associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be adverse but not significant for Alternatives 3 through 7

Impacts to Individuals

The potential for impacts to individual black bears as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Therefore, impacts to individual black bears occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be highly unlikely, and therefore would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity, traffic collisions, noise, and nighttime lighting. Therefore, impacts to individual black bears due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in significant secondary impacts to individual American black bears. Bears that occasionally forage on site, or move or disperse through the Project area would be vulnerable to encounters with humans and pet, stray, and feral dogs and increased vehicle

collisions, and their behavior may be altered by lighting and noise associated both the construction activities and long-term development. Trash, garbage, and other debris associated with construction may attract bears, increasing their risk of negative encounters with humans.

The primary mitigation strategy to reduce long-term secondary impacts to a level less than significant is the permanent preservation, restoration and enhancement, and management of 6,700 acres in the River Corridor SMA, High Country SMA, and Salt Creek area that will provide adequate movement and dispersal habitat for black bear through the Project area and limit the risk of negative encounters with humans. Restoration and enhancement activities, including a naturally vegetated transition area along the River Corridor SMA and restoration at the large culverted crossing of SR-126 west of the Specific Plan area, will increase native vegetation cover and provide additional protection for the black bear as it moves through the Project area. This large open space system connects the Santa Susana Mountains in the south to the Los Padres National Forest north of the Santa Clara River *via* the High Country SMA, Salt Creek area, and River Corridor SMA (**Figures 4.5-3** and **4.5-22**). This regional habitat connection will allow the black bear to disperse through the Project area without having to contact residential, commercial, and industrial areas, thus avoiding secondary effects, such as noise and nighttime lighting. Lighting effects at the natural open space–urban interface will also be controlled by requiring downcast lighting along the interface. The large, contiguous areas of natural land, along with wildlife undercrossings of SR-126 (**Figure 4.5-32**), therefore, will provide habitat linkages and wildlife corridors to support movement between larger core habitat areas north and south of the Project area. Negative encounters between black bears and humans and pet, stray, and feral dogs in open spaces areas will be controlled through restrictions on recreational activities and through direct controls on stray and feral dogs.

During construction, trash, garbage, and other debris that could attract bears to construction sites will be secured.

All specific mitigation measures for the American black bear are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-161 SECONDARY IMPACTS – AMERICAN BLACK BEAR

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified several mitigation measures that will mitigate secondary impacts to the black bear. The primary focus of these mitigation measures is to provide adequate habitat in the open space system for the black bear and to reduce impacts related to increased human activity that could inhibit movement by the black bear through the region.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 relate to habitat restoration in the River Corridor SMA and provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development and human activity on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side of bank stabilization and development.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation and allow the black bear to move unconstrained through the Project region (**Figure 4.5-3**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-17 and SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the River Corridor SMA and High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as

described in SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

SP-4.6-56 requires that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to mitigate for impacts from habitat fragmentation, including reduction in wildlife corridors and habitat linkages and increased human activity. A measure is also provided to control for bear attractants during construction, including trash, garbage, and other debris.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126. BIO-19 includes a provision to enhance the existing agricultural undercrossing and agricultural land at the base of Salt Creek to facilitate wildlife movement between the north side of SR-126 and the Salt Creek area. This enhancement would include dedication of a portion of the agricultural field north of SR-126 and planting of trees and/or scrub habitat north and south of the existing undercrossing of the highway.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active

intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-59 specifies that a wildlife movement corridor plan shall be prepared and implemented. The plan will include design criteria for road crossings and methods to encourage passage, such as lighting, bubblers, and vegetation planting. Signs shall be installed along roadways, indicating potential wildlife crossings where mountain lions and mule deer are likely to cross. These wildlife crossing signs and undercrossings for mountain lion and mule deer will also serve black bear.

BIO-63 will be implemented to mitigate impacts by pet, stray, and feral dogs. This mitigation measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral dogs in open space areas.

BIO-70 will be implemented to control for bear attractants during construction, including trash, garbage, and other debris. This general mitigation measure primarily describes features and construction notes to protect biological resources. The relevant element of this mitigation measure is that the operator will install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to black bear will be reduced to a level that would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

MOUNTAIN LION (SPECIALLY PROTECTED MAMMAL)

Life History

The mountain lion (*Puma concolor*) is a widespread species that occupies a latitudinal range of 100° in North and South America and is found in nearly all habitats from the northern limit of the Canadian forests to Patagonia in South America (NatureServe 2007). It is primarily limited to the mountainous regions of the western United States and Canada but has small, disjunct populations in southern Florida and the Upper Peninsula of Michigan (NatureServe 2007). Globally, it is considered to be secure in its range, but it may be locally threatened in some areas because of hunting pressure, lack of prey, and other anthropogenic factors (NatureServe 2007). Its range throughout California extends from deserts to humid forests in the Coast Ranges and from sea level to 3,050 meters (10,000 feet) AMSL, but mountain lions do not inhabit xeric regions of the Mojave and Colorado deserts. They are most abundant in habitats that support their primary prey, mule deer, and their seasonal movements tend to follow migrating deer herds.

Mountain lions prefer habitats that provide cover, such as thickets in brush and timber in woodland vegetation (Zeiner *et al*. 1990B). They also utilize caves and other natural cavities for cover and breeding. They require extensive areas of riparian vegetation and brushy stages of various habitats, with interspersions of irregular terrain, rocky outcrops, and tree–brush edges. Mountain lions build their dens in natural cavities such as caves and sometimes in thickets. A study of diurnal bedding habitat in northeast Oregon suggests that mountain lions also need both vertical and horizontal cover components, such as rocks and downed logs, to feel secure enough to bed (Akenson *et al*. 1996). They are active year-round and are solitary crepuscular hunters (active early morning and evening), although they are frequently active nocturnally and occasionally during the day. Mule deer make up 60% to 80% of their diet, but mountain lions also prey on raccoons, rabbits, rodents, porcupines, coyotes, and occasionally livestock.

Home ranges of mountain lions are quite variable in relation to season, sex, and resources. The home ranges of adult male mountain lions often span well over 100 square miles (*e.g.*, Loft 1996). In the Santa Ana Mountains of Orange County, Padley (1989, 1996) found that annual home ranges varied from 32 to 86 square miles, with a mean of 43 square miles, and that home ranges were stable from year to year, which Padley suggested may be related to the abundance of mule deer populations. Mountain lions mutually avoid each other, but are not known to actively defend their territory.

Females generally give birth every other year (Zeiner *et al.* 1990B). Cubs are weaned at about 40 days and remain with their mothers for an average of 15 months and sometimes up to 26 months. Dispersal by juvenile mountain lions in the Santa Ana Mountains is initiated by the mother abandoning her cub at about 18 months of age at the edge of her range, whereupon the cub disperses to the part of the urban–wildland interface farthest from its natal range and uses temporary home ranges near this interface (Beier 1996). Beier (1996) also observed dispersing

individuals using corridors along well-covered travel routes, an underpass, areas lacking artificial lighting, and areas with low residential densities (less than one dwelling unit per 16 hectares (39.5 acres)). A total of 60% of the females did not disperse from their natal range, whereas all males did. Females dispersed on average 7.7 miles and males dispersed on average 62.8 miles.

The mountain lion is categorized as highly mobile with regard to its ability to move through the landscape, in particular through corridors and linkages (Singleton and Lehmkuhl 1999; Dudek 2008C). Wildlife movement corridors and linkages are critical for mountain lions due to their large home ranges and the need for access to water sources. Wildlife corridors and landscape linkages serve to ameliorate habitat fragmentation and isolation by permitting travel, migration, and mating opportunities (Beier and Loe 1992). While they use a variety of suitable natural habitats, they tend to avoid urban areas. A study in the Santa Ana Mountains analyzed the travel paths of radio-tagged mountain lions (Dickson *et al*. 2005) and showed that mountain lions frequented canyon bottoms and gentle slopes disproportionately more than ridgelines and steep slopes. They prefer riparian vegetation for diurnal use and nocturnal travel, which may indicate their preference for canyon bottoms. The Conservation Biology Institute (CBI 2003) monitored wildlife movement in San Diego County and found that mountain lions pass through fairly restricted areas. Although bridge underpasses and natural overpasses are the desired crossings of roads, mountain lions in southern California, for example, are known to use box culverts less than 15 by 15 feet to pass under freeways (Beier 1995). It is also notable that Florida panthers use underpasses as low as seven feet in height under a divided highway (Foster and Humphrey 1995), indicating that mountain lions will move through fairly constrained passages if necessary.

The main threat to the mountain lion in southern California is urban development and its associated roads, utilities, and facilities and the resulting decrease and fragmentation of habitat available for the mountain lion. The large areas of contiguous open foraging habitats required by this species are becoming increasingly scarce. Urban development also increases the proximity of mountain lions to residences and consequently increases the frequency of human encounters with mountain lions, often resulting in killing of the lion, as well as mortality of mountain lions from vehicle collisions. Human presence also may have adverse effects on mountain lion behavior by altering their range use and foraging activities (Van Dyke *et al*. 1986).

Survey Results

Mountain lions have been documented within and adjacent to the Project area during focused surveys in 2004 for mammals by Impact Sciences (2005). They were observed at scent/track stations four times in riparian willow habitat (Impact Sciences 2005) and also observed in the High Country SMA in 2005 (Dudek and Associates 2006B). Mountain lions were not observed during spotlight surveys by Impact Sciences (2005). Specific locations for mountain lions in the Project area were not provided by Impact Sciences (2005), but it is assumed that mountain lions could occur anywhere in the Project area where deer also occur. A mountain lion was also

observed in 2008 in upper Middle Canyon (Huntley 2008). The entire Project area, at approximately 14,300 acres (22 square miles), is probably not large enough to encompass the entire home range of a mountain lion. Even assuming some level of home range overlap between and within sexes, it is unlikely that the Project area would support more than two or three individuals at any given time.

The mountain lion uses riparian, woodland, and upland habitats in the Project area. Primary habitats contain some cover for this species and include alluvial scrub, southern cottonwood–willow riparian, Mexican elderberry, giant reed, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, big sagebrush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, coastal scrub alliances and associations, big sagebrush–California buckwheat, coast live oak woodland, valley oak woodland, valley oak/grass, mixed oak woodland, and California walnut woodland. A total of 8,581 acres of suitable habitat is present in the Project area.

Because of its broad habitat use, the mountain lion is assumed to freely range throughout the Project area. An important issue, therefore, is to what extent the proposed Project would constrain use of the site and movement between large protected open space areas in the region. **Figure 4.5-22** shows regional linkages adapted from South Coast Wildlands (Penrod *et al*. 2006) that would accommodate mountain lion. The north–south linkage design for this species is generally located west of the Project area but incorporates the Salt Creek area and High Country SMA open space areas as well as the River Corridor SMA. **Figure 4.5-31** shows more local habitat linkages and available crossings of the Santa Clara River. There are two linkages that the mountain lion would likely use: Salt Creek Canyon, which serves as a southeast-to-northwest habitat linkage from the Salt Creek area and High Country SMA through the Fillmore Greenbelt to the Los Padres National Forest, and the Santa Susana Mountains Corridor, which serves as a generally east-to-west habitat linkage from High Country SMA to the Ventura County S.O.A.R. Open Area to the west and the public lands to the east. There are three wildlife crossings of SR-126 in Ventura County and three crossings of SR-126 within the Project area, at San Martinez Grande Canyon, Chiquito Canyon, and Castaic Creek. While all three of the latter crossings are of adequate size and configuration to convey movement, they are also well east of the regional corridors depicted in **Figure 4.5-22** and would be bound by development upon build-out. Mountain lions would have to travel close to urban areas to use these crossings. These crossings would likely have less movement than the three locations in Ventura County that line up more directly with the linkages shown in **Figure 4.5-22**.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of

Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 146 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.7% of these communities on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 63 acres would be directly temporarily impacted.

Habitat use by mountain lions is expected to track the distribution of mule deer in the Project area. Because mule deer use tributaries to the Santa Clara River with water and cover, and these tributaries would be affected by the RMDP, at least temporarily displacing deer, mountain lions would be affected as well. However, construction would be phased such that alternative resource areas would remain available to both species. The relatively small permanent loss of habitat and temporary impacts as a result of the construction/grading activities therefore would not have a substantial adverse effect on the mountain lion; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,077 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 24.2% of these communities on site (**Figures 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

A relatively large amount and percentage of on-site riparian and upland vegetation providing habitat for the mountain would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. The mountain lion is an uncommon species and declining in southern California. It has been observed in the Project area and probably currently uses much of the existing Project area for foraging, movement, and dispersal. This loss of habitat is expected to alter the use and distribution of the mountain

lion on site, both as a result of direct loss of habitat and the effect of habitat loss on the distribution of mule deer. This loss of habitat would have a substantial adverse effect on the distribution of this species on site by eliminating it from 24.2% of currently occupied habitat, thus reducing its range on site. The loss of habitat could also substantially interfere with its movement across the site between core habitat areas to the north and south (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,223 acres (25.0%). Because of the large amount and percentage of habitat loss, the combined direct and indirect impacts to suitable habitat would have a substantial adverse effect on the distribution of the mountain lion on site, thus substantially restricting its range on site and potentially interfering with its movement across the site between core habitat areas to the north and south (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because the mountain lion is highly mobile, it would be expected to leave and/or avoid construction zones. It is unlikely that RMDP-related construction activities would result in direct injury or mortality of individual adult mountain lions, although there is some risk of collision with fast-moving construction equipment and vehicles. Adult or juvenile mountain lions occurring in the RMDP would likely be foraging or moving through the area. In addition, mountain lions typically den in more rocky areas with caves or cavities suitable for dens that are more likely found in the upland habitats of High Country SMA than the habitats found within the Project area; however, the species has been known to den in dense vegetation. Therefore, it is unlikely that RMDP-related construction activities would result in injury or mortality of very young mountain lions still confined to natal dens. Implementation of the SCP would not directly impact this species. Although foraging and movement may be somewhat altered, injury or mortality of individuals during RMDP-related construction activities would be unlikely. Construction activities would not have a substantial direct effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the

species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

Because the mountain lion is highly mobile, it would be expected to leave and/or avoid construction zones during build-out of the Specific Plan, VCC, and Entrada planning areas. It is unlikely that construction activities would result in direct injury or mortality of individual adult mountain lions, although there is some risk of collision with fast-moving construction equipment and vehicles. However, the upland portions of the Specific Plan area that would be developed have the potential to support mountain lion dens. If an active mountain lion den occurred within or in proximity to an area proposed for grading, injury or mortality could occur to young/fetal cubs as a result of den disturbance. The loss of young/fetal cubs would have a substantial adverse effect on this species (significance criterion 1). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term noise and human presence associated with construction and/or grading activities for the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas may alter the foraging behavior and movement patterns of mountain lions in the immediate vicinity of these activities. However, because this species typically forages and moves at night (although some activity may occur at dusk and dawn), the effects of these short-term construction-related activities on mountain lions are expected to be minimal, although it may avoid lighted construction areas. Implementation of the SCP would not affect this species.

Long-term secondary impacts associated with urban development include nighttime illumination of areas adjacent to open space that could disrupt foraging and movement behavior; increased incidence of vehicle collisions at new and expanded roadways; increased encounters with humans and pet, stray, and feral dogs; and the use of rodenticides to control small mammals that are prey for mountain lions (*e.g.*, ground squirrels and rabbits), which may reduce the prey populations and possibly cause secondary poisoning. The build-out of the Specific Plan, VCC, and Entrada planning areas would also result in habitat fragmentation and isolation of habitat on site currently used. The wildlife corridors and habitat linkages that mountain lions currently use to travel to and from the Santa Clara River corridor, the Los Padres National Forest to the north, the Santa Susana Mountains to the south, the Ventura S.O.A.R. Open Area to the west, and the public lands to the east would be reduced. Decreasing the extent of the wildlife corridors and linkages may bring mountain lions closer to residential areas and roads during their movements between core habitat areas.

These short-term and long-term secondary impacts could permanently restrict the range of the mountain lion and reduce its population on site (significance criteria 1, 4, and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the mountain lion (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 126 acres (1.5%) of permanent loss and 67 acres of temporary loss;
- Alternative 4 – 128 acres (1.5%) of permanent loss and 60 acres of temporary loss;
- Alternative 5 – 143 acres (1.7%) of permanent loss and 72 acres of temporary loss;
- Alternative 6 – 121 acres (1.4%) of permanent loss and 69 acres of temporary loss; and
- Alternative 7 – 57 acres (0.7%) of permanent loss and 91 acres of temporary loss.

Compared to Alternative 2, which would result in 146 acres (1.7%) of permanent loss and 63 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 6 would be somewhat less overall and the temporary loss of habitat under Alternatives 3 through 6 would not be substantially different. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in fewer permanent impacts and more temporary impacts to suitable habitat for the mountain lion compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and the Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for the mountain lion (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,949 acres (22.7%) of permanent loss;
- Alternative 4 – 1,894 acres (22.1%) of permanent loss;
- Alternative 5 – 1,844 acres (21.5%) of permanent loss;
- Alternative 6 – 1,565 acres (18.2%) of permanent loss; and
- Alternative 7 – 1,399 acres (16.3%) of permanent loss.

Compared to Alternative 2, which would result in 2,077 acres (24.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the mountain lion compared to the other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the relatively large amount and percentage of habitat lost on site. The indirect permanent loss of suitable habitat for the mountain lion occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for the mountain lion:

- Alternative 3 – 2,075 acres (24.2%) of permanent loss;
- Alternative 4 – 2,021 acres (23.6%) of permanent loss;

- Alternative 5 – 1,986 acres (23.1%) of permanent loss;
- Alternative 6 – 1,686 acres (19.6%) of permanent loss; and
- Alternative 7 – 1,455 acres (17.0%) of permanent loss.

Compared to Alternative 2, which would result in 2,223 acres (25.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7. There would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would result in reduced impacts to suitable habitat for the mountain lion compared to the other alternatives. Although reduced compared to Alternative 2, the combined direct and indirect permanent loss of suitable habitat for the mountain lion occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would still be substantial and therefore would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to individual mountain lions as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be substantially different than under Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Adults would likely leave and/or avoid construction areas, but there would be some risk of injury or mortality from collisions with fast-moving construction equipment or vehicles. Impacts to individual mountain lions occurring as a result of implementation of the RMDP and the SCP under Alternatives 3 through 7 would be adverse but not significant. There is a greater risk of injury or mortality of young/fetal cubs as a result of den disturbance due to construction activities in the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas because there is greater potential for denning habitat in these areas. These impacts would be significant, absent mitigation under Alternatives 3 through 7.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-

term effects due to factors such as increased human activity, increased incidence of traffic collisions, and nighttime lighting. Therefore, the loss or degradation of suitable habitat and the impacts to mountain lions due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in three types of significant impacts to mountain lion: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and suitable habitat outside the Project footprint.

Significant impacts to individuals could occur if natal dens are present in the Specific Plan area and are disturbed during construction. This could include the destruction of dens from vegetation clearing and grading, which could result in injury or mortality of individuals from direct contact with equipment or entombment. Impacts may also include behavioral disturbances due to increased human activity, noise, ground vibration, and lighting, which could cause the female to abandon an active natal den or could disrupt foraging activities. To reduce these impacts, the applicant will conduct pre-construction surveys for natal dens within the construction footprint and within a 2,000-foot buffer around the construction site. If a natal den is found, no construction-related activities shall occur within the buffer zone until the cubs are reared.

The combined permanent loss of suitable habitat for the mountain lion resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 1,455 acres (17.0%) under Alternative 7 to 2,223 acres (25.9%) under Alternative 2. This would be a substantial loss of suitable habitat and would reduce the size and distribution of the mountain lion population in the Project area. The combined Newhall Ranch Specific Plan Program EIR mitigation measures and additional mitigation measures recommended by this EIS/EIR will result in a large, permanent open space system that will provide suitable habitat to support the mountain lion in the Project vicinity. Implementation of these mitigation measures will result in protection, restoration and enhancement, and management of approximately 5,129 acres of suitable habitat for the mountain lion. This open space will be conserved in three main interconnected areas: the River Corridor SMA, the High Country SMA, and the Salt Creek area (**Figure 4.5-3**). Native vegetation restoration and enhancement in these areas will provide additional protective cover for mountain lions.

With respect to secondary effects, mountain lions using habitat in close proximity to construction zones may be disturbed by construction activities, including increased human activity, noise, ground vibration, and lighting, which may alter essential behavioral patterns, such as foraging and rearing of young. The protection of mountain lion natal dens with young, as well as controls on lighting, will help avoid and reduce these construction-related secondary impacts. Potential

long-term effects of development include habitat fragmentation; increased human activity; pet, stray, and feral dogs; lighting; increased vehicle collisions; and use of rodenticides, which may reduce prey and potentially cause secondary poisoning. The large open space system composed of the River Corridor SMA, the High Country SMA, and the Salt Creek area will provide adequate protected open space that will in part offset these impacts. The open space system connects the Santa Susana Mountains in the south to the Los Padres National Forest north of the Santa Clara River *via* the High Country SMA, Salt Creek area, and River Corridor SMA (**Figures 4.5-3** and **4.5-22**). This regional habitat connection will allow mountain lions to use and move through the Project area without having to contact residential, commercial, and industrial areas, thus reducing secondary effects, such as noise and nighttime lighting. Lighting effects at the natural open space–urban interface will also be reduced by requiring downcast lighting along the interface. The large, contiguous areas of natural land, along with wildlife undercrossings of SR-126 (**Figure 4.5-32**), therefore, will provide habitat linkages and wildlife corridors to support movement between larger core habitat areas north and south of the Project area. Several specific mitigation measures will also be implemented to control human activities in open space areas, including restrictions on recreational activities and homeowner education. Pets will be leashed, and stray and feral dogs will be otherwise controlled in or adjacent to open space areas. Rodenticides will be controlled through an integrated pest management (IPM) plan. Vehicle collisions will be reduced through placement of signs indicating where along roads mountain lions are likely to cross and road undercrossings will be built in accordance with current wildlife corridors used by this species. Implementation of these measures will allow this species to persist on site after development in the large amount of permanent open space that will be protected and managed.

All specific mitigation measures for mountain lion are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-162 IMPACTS TO INDIVIDUALS – MOUNTAIN LION

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan EIR did not identify mitigation measures to avoid, minimize, or mitigate the loss of mountain lion natal dens.

Measures Recommended by EIS/EIR

This EIS/EIR recommends BIO-60 to avoid impacts to mountain lion natal dens. BIO-60 requires a survey for mountain lion natal dens 30 days prior to construction activities. The survey shall include the construction footprint and the area within 2,000 feet of the Project disturbance boundaries. If a natal den is found, an appropriate setback from the den shall be established until

it is determined by a qualified biologist in consultation with CDFG that the cubs have been successfully reared or the mountain lions have left the area.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts to mountain lion natal dens would not be significant for Alternatives 2, 3, 4, 5, 6, and 7 because no impacts would occur.

IMPACT 4.5-163 LOSS OF HABITAT – MOUNTAIN LION

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate the loss of habitat for the mountain lion through protection, restoration and enhancement, and management of habitat.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and 1:1 replacement of riparian resources.

SP-4.6-21 through SP-4.6-26 and SP-4.6-36 through SP-4.6-42 describe the open space dedication of the River Corridor SMA and the High Country SMA. In combination with the Salt Creek area, these areas will form a large, interconnected open space system that will reduce habitat fragmentation effects (**Figures 4.5-3** and **4.5-22**).

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits; mitigation for oak resources is subject to the Oak Resources Management Plan; and mitigation banking for Mexican elderberry scrub is be subject to the approval of the County Forester.

SP-4.6-17 and SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting,

fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the River Corridor SMA and High Country SMA.

Mitigation Measure SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-26a requires that mitigation requirements for riparian vegetation in the High Country SMA be the same as required for the River Corridor SMA and oak tree replacement occur as described in SP-4.6-48. Mitigation Measure SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

Measures Recommended by EIS/EIR

The EIS/EIR recommends the following mitigation measures to reduce and mitigate the loss of mountain lion habitat through protection, restoration and enhancement, and management of habitat.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active

intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A) and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, the loss of habitat for the mountain lion will be reduced to a level that would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-164 SECONDARY IMPACTS – MOUNTAIN LION

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures that will mitigate secondary impacts to the mountain lion, including habitat fragmentation, increased human and pet activity, and nighttime illumination of areas adjacent to open space that could disrupt foraging and movement behavior.

SP-4.6-1 through SP-4.6-16, SP-4.6-21 through SP-4.6-26, SP-4.6-36 through SP-4.6-42, SP-4.6-48, and SP-4.6-63, as described above, will be implemented to mitigate for habitat fragmentation and increased human and pet activity through protection, restoration and enhancement, and management of habitat.

SP-4.6-17 and SP-4.6-29 through SP-4.6-32, as described above, will be implemented to control public activities in the River Corridor SMA and High Country SMA.

In addition, SP-4.6-18 and SP-4.6-19 will benefit the mountain lion through design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage

public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side of bank stabilization and development.

SP-4.6-33 will be implemented to mitigate potential adverse edge effects by permitting construction of buildings and other structures only on developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary.

SP-4.6-56 will be implemented to control nighttime illumination by requiring that all lighting along the perimeter of natural areas be downcast luminaries with light patterns directed away from natural areas.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following additional mitigation measures to reduce secondary impacts, including habitat fragmentation; increased encounters by mountain lions with humans and pet, stray, and feral dogs; the use of rodenticides to control small mammals that are pre for the mountain lion (*e.g.*, ground squirrels and rabbits) that may reduce the prey populations and possibly cause secondary poisoning; and increased incidence of vehicle collisions at new and expanded roadways.

BIO-1 through BIO-16 and BIO-19 through BIO-22, as described above, will be implemented to mitigate for the effects of habitat fragmentation and increased public activity through the preservation, restoration and enhancement, and management of habitat. BIO-19 includes a provision to enhance the existing agricultural undercrossing and agricultural land at the base of Salt Creek to facilitate wildlife movement between the north side of SR-126 and the Salt Creek area. This enhancement would include dedication of a portion of the agricultural field north of SR-126 and planting of trees and/or scrub habitat north and south of the existing undercrossing of the highway.

BIO-59 will be implemented to reduce the chance of vehicle collisions. This measure specifies that a wildlife movement corridor plan shall be prepared and implemented. The plan will include design criteria for road crossings and methods to encourage passage, such as lighting, bubblers, and vegetation planting. Signs shall be installed along roadways, indicating potential wildlife crossings where mountain lions and mule deer are likely to cross.

BIO-63 will be implemented to control for pet, stray, and feral dogs. This measure requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas, specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral dogs in open space areas.

BIO-64 will be implemented to address the use of pesticides and requires preparation of an integrated pest management (IPM) plan addressing the use of pesticides (including rodenticides and insecticides) on site prior to the issuance of building permits.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, the secondary impacts to mountain lion will be reduced to a level that would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

MULE DEER (CDFG TRUST RESOURCE)

Life History

The mule deer (*Odocoileus hemionus*) is a common species with a widespread distribution throughout the western United States and Canada and south into mainland and Baja California, Mexico (Hall 1981). It occurs throughout most of California, except in deserts and intensively farmed areas without cover (Zeiner *et al.* 1990B). Globally, it is considered to be secure in its range, but it may be locally threatened in some areas because of cattle-grazing pressure or other sources of habitat degradation (NatureServe 2007).

Throughout its range, the mule deer uses coniferous and deciduous forests, riparian habitats, desert shrub, coastal scrub, chaparral, and grasslands with shrubs. It is often associated with successional vegetation, especially near agricultural lands (NatureServe 2007). It uses forested cover for protection from the elements and open expanses for feeding (Wilson and Ruff 1999). Mule deer fawn in a variety of habitats that have available water and abundant forage, including moderately dense shrubs and forests, dense herbaceous stands, and higher-elevation riparian and mountain shrub vegetation.

Mule deer are primarily crepuscular, but may be active day or night; their patterns seem to be influenced by abrupt changes or extremes in precipitation, temperature, and relative humidity. The mule deer's diet varies with the season, quality of food, and abundance of food. They forage on new growth of various shrubs. They also forage on forbs, acorns, and a few grasses (NatureServe 2007; Wilson and Ruff 1999). In the spring, they feed primarily on forbs and grasses; in summer and winter, they require shrubs; and in the fall, they rely heavily on acorns where available.

Mule deer can be resident in an area or migrate. In mountainous regions of California, mule deer often migrate to lower elevations during the winter and back to higher elevations in the summer. In milder climates, they usually are not migratory, but local movements may occur in relation to precipitation, and presumably, resource availability (NatureServe 2007). The home ranges of a doe and fawn group vary between 0.2 to 1.9 square miles, but generally are less than one square mile. Bucks have larger home ranges and travel longer distances, varying from 18 to 60 square miles. Does may defend small areas from other deer and predators when they are caring for newborns, which typically are born in the spring and weaned by about 16 weeks (Wilson and Ruff 1999). Bucks are generally solitary but may form small feeding herds in the spring and summer and tend to avoid each other during mating season in the fall.

Mule deer have broad habitat use patterns and use steep slope and ridgelines to avoid predators. They will also travel close to urban. The CBI (2003) wildlife movement study in San Diego County found that mule deer pass through fairly restricted areas. Although open bridges and

bridge overpasses are desired for crossings of roads, mule deer also use box culverts as long as they can see to the other side of the culvert.

Mule deer are still common throughout most of their range. However, some local populations may be threatened with extirpation due to habitat loss and fragmentation and associated anthropogenic impacts, such as increased vehicle collisions; harassment by dogs; and competition for food resources with cattle, sheep, and wild pigs (NatureServe 2007; Zeiner *et al.* 1990B). As noted above, although still relatively common, this species may be declining in southern California.

Survey Results

Mule deer were documented within and adjacent to the Project area during focused surveys in 2004 for mammals by Impact Sciences (2005). Mule deer were most frequently observed in agriculture and coastal scrub, but also in chaparral, riparian willow, and mulefat scrub. In addition to the Impact Sciences (2005) study, mule deer were also observed in the High Country SMA in 2005 (Dudek and Associates 2006B) and in the Entrada development area in 2000 (Haglund and Baskin 2000) and 2006 (Dudek and Associates 2006E).

Mule deer use riparian, woodland, and upland shrub habitats in the Project area, and they often occur along the edges of habitat mosaics where they forage. Primary habitats contain some cover for mule deer and include alluvial scrub, southern cottonwood–willow riparian, Mexican elderberry, giant reed, mulefat scrub, southern coast live oak riparian forest, southern willow scrub, shrub tamarisk, big sagebrush scrub, undifferentiated chaparral scrubs, chamise chaparral, scrub oak chaparral, coastal scrub alliances and associations, big sagebrush–California buckwheat, coast live oak woodland, valley oak woodland, valley oak/grass, mixed oak woodland, and California walnut woodland. A total of 8,581 acres of suitable habitat is present in the Project area.

Because of its broad habitat use, the mule deer is assumed to freely range throughout the Project area. An important issue, therefore, is to what extent the proposed Project would constrain use of the site and movement between large protected open space areas in the region. **Figure 4.5-22** shows regional linkages adapted from South Coast Wildlands (Penrod *et al*. 2006) that would accommodate mule deer. The north–south linkage design for this species is generally located west of the Project area but incorporates the Salt Creek area and High Country SMA open space areas as well as the River Corridor SMA. **Figure 4.5-31** shows more local habitat linkages and available crossings of the Santa Clara River. There are two linkages that mule deer would likely use: Salt Creek Canyon, which serves as a southeast-to-northwest habitat linkage from the Salt Creek area and High Country SMA through the Fillmore Greenbelt to the Los Padres National Forest, and the Santa Susana Mountains Corridor, which serves as a generally east-to-west habitat linkage from High Country SMA to the Ventura County S.O.A.R. Open Area to the west and the public lands to the east. There are three wildlife crossings of SR-126 in Ventura County

and three crossings of SR-126 within the Project area, at San Martinez Grande Canyon, Chiquito Canyon, and Castaic Creek. While all three of the latter crossings are of adequate size and configuration to convey movement, they are also well east of the regional corridors depicted in **Figure 4.5-22** and would be bound by development upon build-out. Mule deer would have to travel close to urban areas to use these crossings. These crossings would likely have less movement than the three locations in Ventura County that line up more directly with the linkages shown in **Figure 4.5-22**.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

A total of 146 acres of suitable habitat would be permanently lost through implementation of the RMDP and the SCP, representing 1.7% of these communities on site (**Figure 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat). A total of 63 acres would be directly temporarily impacted.

Tributaries that provide water sources, forage, and cover for mule deer would be affected at various times during construction of RMDP facilities. Construction would be phased such that alternative resource areas would remain available to this species, but it would be at least temporarily displaced from areas under active construction. Because the mule deer is still widespread and generally common throughout its range, however, the relatively small permanent loss of habitat and temporary impacts as a result of the construction/grading activities would not have a substantial adverse effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

A total of 2,077 acres of suitable habitat would be permanently lost through build-out of the Specific Plan, VCC, and Entrada planning areas, representing 24.2% of these communities on site (**Figures 4.5-114**, Alternative 2 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat).

Although the mule deer is still widespread and generally common, a relatively large amount and percentage of on-site riparian, woodland, and upland shrub vegetation providing habitat for the species would be permanently lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. While this loss of habitat is expected to alter the range use and distribution of the mule deer on site, this species is still widespread and relatively common throughout its range. In addition, there would substantial habitat remaining in the High Country SMA, Salt Creek area, and River Corridor SMA after build-out. This loss of habitat therefore would not have a substantial adverse effect on this species, substantially affect its distribution in the Project region, or substantially interfere with its movement across the site between core habitat areas to the north and south (significance criteria 1, 4, and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 2,223 acres (25.0%). While this combined loss of habitat is expected to alter the range use and distribution of the mule deer on site, this species is still widespread and relatively common throughout its range. In addition, there would substantial habitat remaining in the High Country SMA, Salt Creek area, and River Corridor SMA after implementation of the RMDP and build-out. This loss of habitat therefore would not have a substantial adverse effect on this species, substantially affect its distribution in the Project region, or substantially interfere with its movement across the site between core habitat areas to the north and south (significance criteria 1, 4, and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Impacts to Individuals

Direct Permanent and Temporary Impacts

Because the mule deer is highly mobile, it generally would be expected to leave and/or avoid construction zones. However, occasional collisions between mule deer and faster-moving construction equipment and other vehicles may occur, resulting in injury or

mortality of individuals. Implementation of the SCP would not directly impact this species. Because the mule deer is still widespread and relatively common in its range, however, the occasional injury or mortality of individuals resulting from collisions during RMDP-related construction activities would not have a substantial direct effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Indirect Permanent Impacts

Similar to direct impacts, occasional collisions between mule deer and faster-moving construction equipment and other vehicles may occur during construction activities associated with build-out of the Specific Plan, VCC, and Entrada planning areas, resulting in injury or mortality of individuals. Because the mule deer is still widespread and relatively common in its range, however, the occasional injury or mortality of individuals resulting from collisions would not have a substantial direct effect on this species; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1, 4, and 7). Indirect permanent impacts (Impacts to Individuals) would be adverse but not significant.

Secondary Impacts

Short-term noise, dust, and human presence associated with construction and/or grading activities for the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas may alter the foraging behavior and movement patterns of the mule deer in the immediate vicinity of these activities. Daytime activity by mule deer near construction areas is most likely to be affected, while nocturnal activity probably would be relatively unaffected, although deer may avoid lighted areas. Implementation of the SCP would not affect this species.

Long-term secondary impact on mule deer associated with urban development include nighttime illumination of areas adjacent to open space that could disrupt foraging and movement behavior; increased incidence of vehicle collisions at new and expanded roadways; and increased encounters by mule deer with humans and pet, stray, and feral dogs. The build-out of the Specific Plan, VCC, and Entrada planning areas would also result in habitat fragmentation and isolation of habitat on site. The wildlife corridors and habitat linkages that mule deer currently use to travel to and from the Santa Clara River corridor, the Los Padres National Forest to the north, the Santa Susana Mountains to the south, the Ventura S.O.A.R. Open Area to the west, and the public lands to the east would be reduced. Decreasing the extent of the wildlife corridors

and linkages for mule deer may bring them closer to residential areas and roads during their movements between core habitat areas.

These short-term and long-term secondary impacts could permanently restrict the range of mule deer and reduce its population on site. However, because this species is still widespread and relatively common in its range, and substantial suitable habitat would remain in the Project vicinity in the High Country SMA, Salt Creek area, and River Corridor SMA after implementation of the RMDP and build-out of the Specific Plan, VCC, and Entrada planning areas, these secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for the mule deer (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 126 acres (1.5%) of permanent loss and 67 acres of temporary loss;
- Alternative 4 – 128 acres (1.5%) of permanent loss and 60 acres of temporary loss;
- Alternative 5 – 143 acres (1.7%) of permanent loss and 72 acres of temporary loss;
- Alternative 6 – 121 acres (1.4%) of permanent loss and 69 acres of temporary loss; and
- Alternative 7 – 57 acres (0.7%) of permanent loss and 91 acres of temporary loss.

Compared to Alternative 2, which would result in 146 acres (1.7%) of permanent loss and 63 acres of temporary impacts, the permanent loss of habitat under Alternatives 3 through 6 would be somewhat less overall and the temporary loss of habitat under Alternatives 3 through 6 would not be substantially different. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would result in fewer permanent impacts and more temporary impacts to suitable habitat for the mule deer compared to the other alternatives.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is similar in magnitude compared to Alternative 2, these impacts would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and the Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for mule deer (**Figures 4.5-115** through **4.5-119**, Alternatives 3 through 7 Impacts to Scrub, Chaparral, Riparian, Oak Woodland, Oak/Grass, and Walnut Woodland Wildlife Habitat):

- Alternative 3 – 1,949 acres (22.7%) of permanent loss;
- Alternative 4 – 1,894 acres (22.1%) of permanent loss;
- Alternative 5 – 1,844 acres (21.5%) of permanent loss;
- Alternative 6 – 1,565 acres (18.2%) of permanent loss; and
- Alternative 7 – 1,399 acres (16.3%) of permanent loss.

Compared to Alternative 2, which would result in 2,077 acres (24.2%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 7 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under these alternatives. There would also be successive reductions in the development footprints for the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint under Alternative 7 that would reduce impacts to suitable habitat for the mule deer compared to the other alternatives.

Alternatives 3 through 7 would have reduced impacts compared to Alternative 2. Also, because the mule deer is still widespread and relatively common in its range and because substantial habitat would remain in the Project vicinity in the High Country SMA, Salt Creek area, and River Corridor SMA following build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas, these impacts would not have a substantial adverse effect on this species. The indirect permanent loss of suitable habitat for the mule deer occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and

Entrada planning areas would result in the following impacts to suitable habitat for the mule deer:

- Alternative 3 – 2,075 acres (24.2%) of permanent loss;
- Alternative 4 – 2,021 acres (23.6%) of permanent loss;
- Alternative 5 – 1,986 acres (23.1%) of permanent loss;
- Alternative 6 – 1,686 acres (19.6%) of permanent loss; and
- Alternative 7 – 1,455 acres (17.0%) of permanent loss.

Compared to Alternative 2, which would result in 2,223 acres (25.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts for the same reasons as described above in the discussions of direct and indirect impacts. Alternatives 4 through 7 would have reduced impacts compared to Alternative 3 because VCC would not be constructed under Alternatives 4 through 7. There would also be successive reductions in the Specific Plan and Entrada planning areas under Alternatives 4 through 7 and there would be additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that would result in reduced impacts to suitable habitat for the mule deer compared to the other alternatives. In addition, because the mule deer is still widespread and relatively common in its range and because substantial habitat would remain in the Project vicinity in the High Country SMA, Salt Creek area, and River Corridor SMA following implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas, these impacts would not have a substantial adverse effect on this species. The combined direct and indirect permanent loss of suitable habitat for the mule deer occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Impacts to Individuals

The potential for impacts to individual mule deer, including injury or mortality as a result of collision with fast-moving construction equipment or vehicles, as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2, although the relative risk of this impact would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Because this species is widespread and relatively common in its range, impacts to individual mule deer occurring as a result of implementation of the RMDP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts on mule deer could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects. Short-term effects could include noise, dust, and increased human activity that could affect its daytime activity and nighttime lighting that could affect its nocturnal activity. Long-term effects include increased human activity, increased incidence of traffic collisions, nighttime lighting, and encounters with pet, stray, and feral dogs. However, because this species is still widespread and relatively common in its range and because substantial habitat will be available in the High Country SMA, Salt Creek area, and River Corridor SMA after implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas these short-term and long-term secondary effects would be adverse but not significant for Alternatives 3 through 7.

Mitigation Strategy and Summary

No mitigation is required for impacts to the mule deer because all impacts were determined to be adverse but not significant. However, several mitigation measures will be implemented for other impacts to biological resources that will further reduce impacts to this species. These mitigation measures include habitat preservation, restoration, enhancement, and management of upland and riparian habitat areas in the River Corridor SMA, High Country SMA, and Salt Creek area that will form a large, contiguous open space system of approximately 6,300 acres, of which more than 5,000 acres are suitable habitat for the mule deer. Riparian and oak woodland restoration and enhancement in this protected open space will provide additional cover for this species. The set-aside of lands also will reduce short-term secondary effects, such as increased noise, lighting, and increased human activity during construction, because individuals will have access to breeding and foraging habitat in undisturbed open space. Mitigation measures also include biological monitoring during construction and controls on lighting. Long-term effects, such as habitat degradation; increased human activity; pet, stray, and feral dogs; and lighting; will be mitigated through a variety of measures.

SAN FERNANDO VALLEY SPINEFLOWER (FC, CE, CNPS LIST 1B.1)

Life History

The San Fernando Valley spineflower (SFVS) (*Chorizanthe parryi* var. *fernandina*) is a low-growing herbaceous annual. Germination occurs following the onset of late-fall and winter rains. Its numbers vary widely from year to year and, in years of poor rainfall, only very few plants may be found. It flowers and sets seed between April and June, depending on rainfall and temperature. Its flowers are minute (only a few millimeters long). The flower bases, including the developing seeds, are within spiny urn-shaped "involucres," also only a few millimeters long. The mature seeds remain inside the involucres, which may serve in their dispersal. Historically, SFVS was known from several occurrences in and around the San Fernando Valley and one site in Orange County (CNPS 2009). As of 1993, all those sites had been presumed extirpated, and the plant presumed extinct (Hickman 1993). In 1999, SFVS was rediscovered in Ventura County, and in 2000 it was rediscovered at Newhall Ranch. Currently, SFVS is known from only these two locations: Laskey Mesa in the Upper Las Virgenes Canyon Open Space in Ventura County, and the Project area in Los Angeles County. These two SFVS locations are approximately 17 miles apart. The Laskey Mesa area is on the southern edge of the Simi Hills near the City of Calabasas in an area formally known as Ahmanson Ranch.

At the two current known locations, SFVS generally occurs within sparsely vegetated grassland and scrub communities and associated ecotones. At Laskey Mesa, SFVS is described as occurring along the interface between California sagebrush scrub and grassland habitats. This observed distribution may be the result of past dryland farming of the mesa top, which would have removed any SFVS growing in the farmed area (CDFG 2001A). Due to past farming and livestock grazing practices, it is not known whether Laskey Mesa was native grassland, coastal scrub, or a mix of both prior to European contact. At the Project site, the majority of SFVS sites occur within California sagebrush scrub and California annual grassland but also occur on sites that were recently subjected to terracing and grubbing for agricultural purposes, but which were not planted with actual crops or were planted with crops in the recent past. SFVS occurs at sites within openings in coast live oak woodland, undifferentiated chaparral, and alluvial scrub. Sparsely vegetated areas with low overall cover of herbaceous vegetation and some bare ground are typical of occupied SFVS sites at Ahmanson Ranch and the Project site, although SFVS has also been observed in areas of dense annual grasses.

The majority of information regarding the pollination biology of SFVS is from the results of studies carried out at Ahmanson Ranch by Jones *et al.* (2002). Five types of arthropods were found to be responsible for more than 75% of visits to SFVS flowers: two species of native ants (*Dorymyrmex pyramicus* and *Solenopsis xyloni*), European honeybee (*Apis mellifera*), and two beetle species (*Dastyinae* sp. and *Zabrotes* sp.). No specific information on seed dispersal is available, but, in the field, involucres have been observed to attach to human skin, clothing, and

shoes, suggesting potential for involucres containing seed to be carried away from the parent plant if they lodge on humans or other animals. Native ants may also play a role in the dispersal of SFVS (LaPierre and Wright 2000).

In addition to the direct loss of individuals, SFVS is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after various human-caused environmental changes, such as repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are known secondary effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives, possibly including SFVS. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

An increase in the abundance of domestic cats and dogs from adjacent Specific Plan, VCC, and Entrada planning areas could indirectly affect the SFVS through the reduction of populations of native rodents that may act as SFVS seed-dispersal agents. In addition, the introduction of Argentine ants could adversely affect SFVS populations because these ants are capable of out-competing and displacing native ants and other arthropod species that may provide important ecological functions for SFVS, including pollination and seed dispersal, as well as for other native plant species (Holway *et al.* 2002). The extent to which Argentine ants may directly impact the SFVS has not been studied directly and remains uncertain, but the impact is assumed to be adverse. Studies by Jones *et al.* (2004) found reduced seed set in SFVS where pollinators were excluded (*i.e.*, preventing cross-pollination among plants, and limiting seed production to only self-pollination events). Their work suggests that open and uninhibited pollination results in the production of considerably more seed, and that native pollinators are important to SFVS reproduction.

Survey Results

Following the rediscovery of SFVS at Ahmanson Ranch, biologists working with Sapphos Environmental Consulting conducted a directed search for SFVS that included historical localities, suitable habitat areas within the historical range of SFVS, and suitable habitat areas near the existing population at Laskey Mesa. A total of seven historical locations and 21 other locations were surveyed with negative results in 1999 and 2000 (Sapphos 2001).

In 2000, URS surveyed portions of the Specific Plan area to the south of and along the Santa Clara River corridor (URS 2002). SFVS was detected at sites along Grapevine Mesa and in the vicinity of Airport Mesa (URS 2002). FL*x* and Katherine Rindlaub found SFVS within the Entrada planning area in 2000 (FL*x* 2004C). Observations of SFVS in 2002, 2003, 2004, 2005,

2006, and 2007 (Dudek and Associates 2002A, 2002B, 2002C, 2004B, 2004C, 2004E, 2004F, 2004G, 2004H, 2006F, 2006G, 2006H, 2006I, 2006J, 2006K; Dudek 2007F, 2007G, 2007H; FL*x* 2004B, 2005, 2006A) were made during surveys that focused on the identification and location of special-status plant species and during field efforts to census and map SFVS occurrences on the Project site.

FL*x* observed SFVS in May 2001 at San Martinez Grande within the Specific Plan area. In May 2002, FL*x* observed SFVS in the central, eastern, and southern portions of Airport Mesa within the Specific Plan area (FL*x* 2002A). In each year from 2002 through 2007, SFVS has been observed in four general areas within the Specific Plan area: Airport Mesa, Grapevine Mesa, Potrero Canyon, and San Martinez Grande Canyon (Dudek and Associates 2002A, 2004C, 2004F, 2006F, 2006I; Dudek 2007F) (**Figures 4.5-25** through **4.5-28**). SFVS has been observed from 2002 through 2007 on the western side of the VCC planning area, just east of Hasley Canyon (Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H) (**Figure 4.5-29,** San Fernando Valley Spineflower Occurrences – Valencia Commerce Center). This species has also been observed from 2002 through 2007 in several areas at the Entrada planning area, including the southeastern portion of the site, the central area in and beside the wash, and the western portion of the site adjacent to the Six Flags Magic Mountain Amusement Park on the south side and west side (Dudek and Associates 2002B, 2004E, 2004H, 2006G, 2006J; Dudek 2007G; FL*x* 2004B, 2005, 2006A) (**Figure 4.5-30,** San Fernando Valley Spineflower Occurrences – Entrada). SFVS was observed in the Entrada site fireworks area in 2004, 2005, and 2006 (FL*x* 2004B, 2005, 2006A).

On the Project site, SFVS occurrences exist predominantly on slopes with a south-facing aspect within openings in sparsely vegetated habitat characterized as open California sagebrush scrub and associations, California annual grasslands, or at the edge of agricultural fields on mesas. Characteristic site conditions include a low cover of grasses, herbs, and shrubs and a visible component of bare ground. Vegetative cover in the area of SFVS occurrences ranged from 5% to 100%, but was most commonly between 60% and 80%. Most of the observed SFVS were found on soils mapped by the USDA (1969) as slightly eroded to eroded Castaic–Balcom silty clay loam (30% to 50% slopes) or Terrace Escarpments. Plants in the vicinities of Grapevine Mesa and Airport Mesa were observed downslope of terrace surfaces capped by Zamora clay loam (2% to 9% slopes), with a few plants occurring on artificial fill or alluvium derived from adjacent terrace deposits. SFVS at San Martinez Grande Canyon occurs primarily on old landslide debris (Seward 2002). The soil type for all mapped SFVS occurrences on the Project site consisted of sandy loams. Elevations at SFVS locations on site range from approximately 1,000 to 1,300 feet AMSL.

Table 4.5-57 presents the SFVS occurrence data and acres occupied within the Project site for each year surveyed. These data are depicted in **Figures 4.5-25** through **4.5-30**. In 2002, surveys estimated 7,814 individuals occupying 0.59 acre. In 2003, surveys estimated populations of

SFVS totaling 5,947,120 individuals occupying 16 acres. In 2004, the total population of SFVS was estimated to be 558,388 individuals occupying 5.33 acres. In 2005, the total population of SFVS was estimated to be 7,391,813 individuals occupying 11.45 acres. In 2006, the total population of SFVS was estimated to be 1,773,496 individuals occupying 8.49 acres. In 2007, the total population of SFVS was estimated to be 760 individuals occupying 0.12 acre. The surveys conducted for SFVS throughout the High Country SMA and Salt Creek area were negative. Approximately 0.25 acre of cumulative SFVS occupied area at Entrada lies within an existing utility easement. Approximately 0.33 acre of cumulative SFVS occupied area at Grapevine Mesa lies within an existing utility easement.

Table 4.5-57
SFVS Population and Area Occupied

SFVS Population and Area Occupied												
	2002		2003		2004		2005		2006		2007	
Location	**Pop**	**Acres**	**Pop**	**Acres**	**Pop**	**Acres**	**Pop**	**Acres**	**Pop**	**Acres**	**Pop**	**Acres**
Airport Mesa	463	0.42	1,114,559	6.84	38,236	2.11	1,706,335	4.37	1,216,612	4.13	226	0.07
Grapevine Mesa	7,256	0.11	2,121,160	4.07	458,235	1.55	4,261,660	2.86	33,596	1.40	76	0.00
Potrero Canyon	—	—	233,328	1.45	13,326	0.47	326,654	1.06	88,659	0.63	67	0.01
San Martinez Grande	75	0.03	1,124,388	2.10	1,387	0.62	123,527	1.39	1,050	1.02	73	0.02
NRSP (Subtotal)	**7,794**	**0.56**	**4,593,435**	**14.46**	**511,184**	**4.75**	**6,418,176**	**9.67**	**1,339,917**	**7.19**	**442**	**0.10**
Entrada	20	0.03	1,183,504	1.45	45,733	0.50	750,482	1.30	229,174	0.95	258	0.02
VCC	—	—	170,181	0.46	1,471	0.09	223,155	0.48	204,405	0.36	60	0.00
TOTAL	**7,814**	**0.59**	**5,947,120**	**16.37**	**558,388**	**5.33**	**7,391,813**	**11.45**	**1,773,496**	**8.49**	**760**	**0.12**

The yearly fluctuations in SFVS data suggest that climatic conditions relate to SFVS abundance and area occupied. SFVS abundance and area occupied were dramatically lower in 2002, 2004, and 2007 compared to 2003 and 2005. Years 2002, 2004, and 2007 experienced below-average rainfall, but in 2003 rainfall was considered normal, according to the Western Regional Climate Center (2008). Winter 2004/spring 2005 rainfall was considered to be one of the wettest years on record; in winter 2005/spring 2006, rainfall was slightly below average but not as low as it was in 2002, 2004, and 2007, according to the Western Regional Climate Center (WRCC 2008). The wide annual fluctuations of SFVS on site suggest that the locations would be best characterized by the cumulative area occupied rather than by number of individuals (**Table 4.5-58**). Because several years of mapped occurrence data are available for SFVS, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent Impacts

Implementation of the proposed SCP and Candidate Conservation Agreement, along with issuance by CDFG of the associated section 2081(b) Incidental Take Permit, would result in impacts to SFVS populations within the RMDP and SCP Project area. The cumulative SFVS occurrence data, collected annually from 2002 through 2007, show 20.24 acres of area occupied by SFVS within the SCP area (*i.e*., the maximum occupied polygon boundaries). The number of individual SFVS plants on site varies considerably from year to year **(Table 4.5-57**). Potential impacts to this species are therefore primarily evaluated in terms of loss of cumulative area occupied by SFVS mapped between 2002 and 2007 rather than number of individuals.

Under the proposed SCP, 68.6% of the area occupied by SFVS within the SCP area would fall within designated spineflower preserves; 31.4% (6.4 acres) would remain outside the spineflower preserves and would be permanently lost. A summary of the conserved areas within each proposed spineflower preserve is included in **Table 4.5-58**. Spineflower preserves would be designated in the five core occurrence areas within the RMDP area and the Entrada planning area (**Figure 4.5-30**). The VCC planning area occurrence (approximately 4.2% of total cumulative area occupied by SFVS on site) would not have an associated spineflower preserve.

Table 4.5-58
Direct Impacts of the Proposed SCP
to SFVS Cumulative Occupied Area

Location	Total Acres	Acres Preserved	Percent Preserved	Acres Impacted	Percent Impacted
Airport Mesa	8.40	5.22	62.2%	3.17	37.8%
Grapevine Mesa	4.97	4.02	80.9%	0.95	19.1%
Potrero	1.93	1.32	68.7%	0.60	31.3%
San Martinez Grande	2.29	2.29	100%	0	0%
Entrada	1.81	1.03	56.8%	0.78	43.2%
VCC	0.85	0	0%	0.85	100%
Total	**20.24**	**13.88**	**68.6%**	**6.35**[1]	**31.4%**

[1] A small portion (0.37 acre) of this area lies within designated open space within the Airport Mesa, Grapevine Mesa, and Potrero areas. While this area does not fall within the impact footprint, it will not be managed or monitored. For purposes of this analysis this area is considered to be taken.

Under the proposed SCP, a series of spineflower preserves would be established and managed with the intent to maximize the likelihood of the long-term survival of the SFVS, the preservation of native habitats, biodiversity, and the corresponding biological functions and values (**Figure 4.5-139**, Alternative 2 Spineflower Preserve Areas with Adjacent Land Use). The proposed spineflower preserves would include habitat for potential SFVS pollinators and dispersal agents. Management of the spineflower preserves would include restoration of degraded and/or damaged SFVS habitats and the establishment of site-specific buffers included in the above acreage, aimed at neutralizing and controlling adverse edge effects from adjacent changes in land use. A spineflower preserve manager would be contracted with, and paid for by, Newhall Land to perform environmental monitoring, oversee the proposed spineflower preserve areas, and ensure that the monitoring and management activities outlined in the proposed SCP are carried out. The spineflower preserve manager would be a qualified biologist or land management entity/biological firm and would be responsible for submitting monitoring reports as required by the SCP. The spineflower preserve manager would have the authority to stop construction work where such work is damaging or would damage spineflower preserves.

The proposed system of spineflower preserves would protect 13.88 acres of area occupied by SFVS within the SCP area and would include buffer areas within the spineflower preserves, to attenuate any adverse edge effects from urban development on areas occupied by SFVS within the spineflower preserves. **Figure 4.5-140**, Typical Spineflower Preserve, schematically depicts a typical preserve with SFVS cumulative occupied area and buffer area. **Table 4.5-59** describes the set of buffer widths that would be implemented with approval of the proposed SCP.

Table 4.5-59
SFVS Buffer Widths, Proposed SCP

Preserve Location	Acres of Area Occupied by SFVS with Buffer of			
	80–100 ft	100–200 ft	200–300 ft	>300 ft
Airport Mesa	0.13	1.76	2.42	0.91
Grapevine Mesa	0.24	2.42	1.36	0
San Martinez Grande	<0.01	0.18	0.41	1.70
Potrero	0.11	0.75	0.46	0.01
Entrada	0.09	0.81	0.13	<0.01
Total by Percent	4.13%	42.59%	34.39%	18.90%

As shown in **Table 4.5-59**, implementation of the proposed SCP would create preserves in which spineflower occurrences are buffered from adjacent land uses by distances ranging in width from a minimum of 80 feet to more than 300 feet. No spineflower occurrences would be buffered by less than 80 feet. These buffer areas would be managed exclusively for SFVS preservation and conservation. No fuel modifications, hydrologic disturbances, foot trails, equestrian trails, or other recreational uses, or any other land uses inconsistent with spineflower management would be permitted within the buffer areas. The buffer width is measured from the edge of the mapped spineflower polygon to the nearest spineflower preserve boundary. Within the spineflower preserves, 95.9% of the SFVS cumulative occupied area would be buffered by at least 100 feet, and 18.9% of the SFVS cumulative occupied area would be more than 300 feet from the preserve edge. Management measures described in the SCP, in combination with these buffer widths, are intended to address various risk factors from adjacent changes in land use and provide for the long-term persistence of SFVS within the preserves.

Any SFVS occurrences outside of the proposed spineflower preserves would be taken incidental to build-out of the approved Specific Plan, VCC, and Entrada planning areas, and such take would be authorized by the proposed Incidental Take Permit under California Fish and Game Code section 2081.

Implementation of the proposed SCP and Candidate Conservation Agreement and subsequent build-out of the Specific Plan, VCC, and Entrada planning areas would permit the loss of approximately 31.4% of known SFVS cumulative occupied area on site, and that loss would occur with the subsequent build-out of the Specific Plan, VCC, and Entrada planning areas (**Figure 4.5-139**). This loss would be a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species (significance criteria 1 and 7). The loss would be mitigated in part through the designation and management of SFVS preserve areas to be monitored and managed for spineflower preservation for 50 years as described in the SCP. Even with preservation

and management as proposed, direct permanent and temporary impacts (Impacts to Individuals) would be significant and unavoidable.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in any additional impacts to SFVS as compared to impacts associated with implementation of the RMDP, SCP, and 2081 Permit (above). Build-out of the Specific Plan, VCC, and Entrada planning areas would not have a substantial adverse effect on SFVS; have the potential to substantially reduce the habitat of the species on site or rangewide; cause the species to drop below self-sustaining levels on site or rangewide; threaten to eliminate the species on site or rangewide; or substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) to SFVS would not be significant because no additional impacts would occur.

Combined Direct and Indirect Permanent Impacts

Under Alternative 2, issuance of the 2081 Permit, implementation of the proposed SCP and Candidate Conservation Agreement and subsequent build-out of the Specific Plan, VCC, and Entrada planning areas would result in the combined direct and indirect loss of approximately 31.4% (6.4 acres) of known SFVS cumulative occupied area on site (**Figure 4.5-139**). This loss would be a substantial adverse effect to SFVS and would substantially reduce its number and restrict its range (significance criteria 1 and 7). The loss would be mitigated in part through the designation and management of SFVS preserve areas to be monitored and managed for spineflower preservation for 50 years as described in the SCP. Even with preservation and management as proposed, the combined direct and indirect permanent impacts (Impacts to Individuals) of Alternative 2 would be significant and unavoidable.

Secondary Impacts

Potential short-term and long-term secondary impacts resulting from the proposed Project to SFVS cumulative occupied area within the proposed preserve areas include hydrologic alterations and water quality impacts; accidental clearing, trampling, and grading; runoff, sedimentation, erosion and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant and animal species; increased human activity and trampling and soil compaction; and increased risk of fire. The potential loss of SFVS as a result of these secondary impacts would constitute a substantial adverse effect on this species as well as a substantial reduction in its number and a reduction in the range of SFVS (significance criteria 1 and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVE 3 THROUGH 7

Impacts to Individuals

Direct Permanent Impacts

Implementation of the proposed SCP and Candidate Conservation Agreement, along with issuance by CDFG of the associated section 2081(b) Incidental Take Permit, and subsequent build-out of the Specific Plan, VCC, and Entrada planning areas would result in the following direct impacts to individual SFVS (**Figures 4.5-141** through **4.5-145**, Alternative 3 through 7 Spineflower Preserve Areas with Adjacent Land Use):

- Alternative 3 – permanent loss of 4.54 acres (22.5%) of cumulative spineflower occurrence area;
- Alternative 4 – permanent loss of 3.53 acres (17.5%) of cumulative spineflower occurrence area;
- Alternative 5 – permanent loss of 3.18 acres (15.8%) of cumulative spineflower occurrence area;
- Alternative 6 – permanent loss of 2.32 acres (11.5%) of cumulative spineflower occurrence area; and
- Alternative 7 – permanent loss of 0.36 acre (1.8%) of cumulative spineflower occurrence area.

Compared to Alternative 2, which would result in the direct permanent loss of 6.35 acres (31.4%) of known SFVS cumulative occupied area, the permanent loss of SFVS cumulative occupied area under Alternatives 3 through 7 would be somewhat less for each subsequent alternative. These differences are primarily due to the increase in the number and size of spineflower preserves to be monitored and managed for spineflower preservation for 50 years as described in the SCP.

Although Alternatives 3 through 7 would have reduced direct impacts (*i.e.,* removal of cumulative occupied area) compared to Alternative 2, these impacts would still be substantially adverse for all alternatives. The direct permanent loss of SFVS as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Indirect Permanent Impacts

The potential for loss of individual SFVS plants as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through

7 would be the same as for Alternative 2 (*i.e.*, no additional impacts to SFVS, as compared to impacts associated with implementation of the RMDP and the SCP, would occur) (**Figures 4.5-141** through **4.5-145**). No loss of individual SFVS would be attributed to these Project components because the losses would result directly from issuance of the 2081 Permit. Indirect impacts (Impacts to Individuals) would not be significant because no indirect impacts would occur.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be the same as the direct permanent impacts (above). The combined direct and indirect permanent loss of SFVS occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 therefore would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts would occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as the introduction of non-native, invasive plant and animal species; hydrologic alterations and water quality impacts; altered fire patterns (frequency, seasonality, or intensity; and increased human activity and trampling and soil compaction. The loss of individual SFVS plants due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to SFVS: (1) impacts to individuals, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Preserve management is described fully in the SCP and incorporates the mitigation measures summarized below. The direct impacts of implementing the SCP, issuing the 2081 Permit, and subsequent build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be mitigated in part (Alternative 2) or in full (Alternatives 3 through 7) through preserve set-aside and management; enhancement of degraded habitats within the SFVS preserves to allow for natural expansion of cumulative occupied area; and active efforts to expand, restore, or create SFVS occurrences within the preserve areas. In addition, preserve

management would minimize secondary effects to the preserve areas by managing buffer areas between SFVS occurrences and preserve boundaries. Alternative 2 would preserve and manage about 68% of known SFVS cumulative occupied area on the Project site. Under Alternatives 3 through 7, SFVS preserve areas would be somewhat larger for each subsequent alternative.

The implementation of mitigation measures to avoid, minimize, and mitigate impacts to individuals, will establish a system of spineflower preserves to be placed into permanent conservation easements and will provide for a long-term monitoring and management program that will ensure the persistence of the SFVS within the Project area. The proposed system of spineflower preserves will protect 13.88 acres (68.6%) of area occupied by SFVS within the SCP area for Alternative 2, 15.61 acres (77.5%) for Alternative 3, 16.61 acres (82.5%) for Alternative 4, 16.96 acres (84.2%) for Alternative 5, 17.82 acres (88.5%) for Alternative 6, and 19.70 acres (98.2%) for Alternative 7.

Management of the spineflower preserves under each alternative will include restoration and enhancement of degraded and/or damaged SFVS habitats. A spineflower preserve manager will be contracted and funded by Newhall Land to perform environmental monitoring, oversee the proposed spineflower preserve areas, and ensure that the monitoring and management activities outlined in the proposed SCP and previously incorporated mitigation measures are carried out. These mitigation measures include the installation of short-term and long-term fencing and signage, limitations on road construction near the spineflower preserves, limitations to prevent unauthorized access to the spineflower preserves, limitations to activities within adjacent FMZs, response strategies to wildfire events as presented in the Emergency Fire Response Plan, and regular and ongoing consultation to be maintained with the County and CDFG in connection with ongoing agricultural operations. To the extent that project-related direct and indirect significant impacts to SFVS cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s) and through other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented. The system of spineflower preserves, along with the long-term monitoring and management program and the translocation and reintroduction program, will allow the SFVS to persist on site in perpetuity.

The secondary impacts of implementing the SCP; issuing the 2081 Permit; and subsequent build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be mitigated in full for Alternatives 2 through 7. Under each of the alternatives the potential short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations, will be avoided and minimized by providing open space connections and setbacks for the spineflower preserves; providing guidelines for grading and construction activities near the spineflower preserves and for restoration activities within the spineflower preserves; by retaining a qualified biologist during all grading and construction activities within

and near the spineflower preserves; by protecting the preserve areas during grading and construction activities with temporary fencing and signage, water control measures, and stormwater flow redirection; and by providing erosion control plans, dust control, and an overall Project SWPPP within and near the spineflower preserves. Long-term secondary impacts to SFVS, such as the introduction of non-native, invasive plant and animal species; increased human activity, trampling, and soil compaction; hydrologic alterations and water quality impacts; and increased fire frequency/extent/intensity, will be avoided and minimized by providing open space connections and setbacks for the spineflower preserves; providing guidelines for ongoing agricultural activities; restricting access to the spineflower preserves; supplying permanent signage and fencing around the spineflower preserves; restricting the plants to be planted in and around the spineflower preserves; and requiring the development of a fire management plan, including guidelines for fuel modification activities within the spineflower preserves, and providing an emergency fire response plan and response strategies for wildfire or mass movement (*e.g.*, landslides, slope sloughing, or other geologic events) within the spineflower preserves.

Both short-term and long-term secondary impacts to SFVS will be mitigated to less than significant by implementing these mitigation measures, by establishing a system of spineflower preserves to protect the core occurrences of SFVS in the Project area under Alternatives 3 through 7, and by implementing management and monitoring within an adaptive management framework to maintain or enhance the protected SFVS occurrences within the five spineflower preserves. To the extent that secondary impacts to SFVS cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s) and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented.

The implementation of these mitigation measures, along with the establishment of a system of spineflower preserves and the implementation of a long-term monitoring and management plan will mitigate to less than significant all secondary impacts to the spineflower preserve areas and the SFVS within the spineflower preserves. The ways in which the specific threats to the SFVS will be avoided and minimized are discussed in greater detail below.

Non-Native, Invasive Plant Species

To address potential impacts associated with the introduction of non-native plants into spineflower preserve areas, the proposed SCP and associated mitigation measures mentioned above contain restrictions intended to reduce the use of invasive, exotic plants within the Specific Plan, VCC, and Entrada planning areas. Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within 100 feet of spineflower preserves shall be reviewed by the spineflower preserve manager or a qualified biologist to ensure that the proposed landscape plants will not naturalize and cause maintenance

or vegetation community degradation in the spineflower preserve and buffer areas. Container plants to be installed within public areas within 200 feet of the spineflower preserves shall be inspected by the spineflower preserve manager or a qualified biologist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, landscape plants shall not be on the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants provided in **Appendix B** of the SCP (Dudek 2007E). The current Cal-IPC list can be obtained from the Cal-IPC website (Cal-IPC 2006).

According to the Conservation Biology Institute (CBI) SFVS buffer study (CBI 2000) prepared for Ahmanson Ranch, and applicable here, the combined effectiveness of measures intended to minimize the effects of invasive plant species on spineflower preserves would be low when the buffer is less than 50 feet wide, moderate with a buffer between 80 and 100 feet wide, and high in situations where buffer width exceeds 200 feet. Because the proposed SCP will provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects from invasive plant species around spineflower preserves should be moderately to highly effective.

Non-Native, Invasive Animal Species

To discourage introduction of non-native animal species, and Argentine ants in particular, into spineflower preserve areas, the proposed SCP and associated mitigation measures mentioned above will require that container plants to be installed within 200 feet of the spineflower preserves be inspected by the spineflower preserve manager for the presence of pests, including Argentine ants, and for disease, prior to delivery to the site and also during delivery. Plants with pests, weeds, or diseases will be rejected.

Although implemented for public safety and the protection of property and not specifically for management of the spineflower preserves, FMZs located at the interface between natural or spineflower preserve areas and urban development will also help to reduce impacts associated with non-native animals entering the spineflower preserves, as these zones will serve as a

vegetated setback between spineflower preserves and urban areas. Using native or non-invasive, non-native, drought-resistant plants to the extent possible in the FMZ will minimize the amount of irrigation required to maintain the vegetation, thus maintaining a xeric habitat in the spineflower preserve areas and buffers that will be less conducive to the establishment of Argentine ant populations.

Argentine ants are of special concern as a potential threat to the SFVS. The goal of management is to preclude the invasion of Argentine ants into the spineflower preserves and their associated buffers. Controls will be implemented using an Integrated Pest Management (IPM) approach and will likely require a combination of methods. The primary management strategy focuses on prevention by maintaining an inhospitable habitat condition in the buffer between the development edge and the spineflower preserve. Argentine ants are sensitive to moisture gradients and are more likely to invade mesic areas and avoid xeric areas. Menke and Holway (2006) noted that the abundance of Argentine ants changes dramatically across soil moisture gradients. They suggest that interception and diversion of urban runoff from naturally xeric areas could restrict invasions by Argentine ants and that "even small reductions in urban runoff may act to limit Argentine ants in areas that are otherwise too dry" (Menke and Holway 2006). Thus, a "dry zone" between urban and natural habitats, where there is naturally little moisture, may act a barrier for Argentine ants and inhibit them from invading the natural areas.

The following project design features and management measures will be implemented to prevent the invasion of Argentine ants in the spineflower preserves:

1. Providing "dry zones" between urban development and SFVS populations, where typical soil moistures are maintained at levels below about 10% soil saturation, which will deter the establishment of nesting colonies of Argentine ants; and by providing dry zone buffers of sufficient width to reduce the potential for Argentine ant activity within core habitat areas;
2. Ensuring that landscape container plants installed within 200 feet of spineflower preserves are ant-free to reduce the chance of colonies establishing in areas close to the spineflower preserves;
3. Maintaining natural hydrologic conditions in the spineflower preserves through the Project design features for roadways, French drains, irrigation systems, underground utilities, drainage pipes and fencing, storm drains, and any other BMP measures that apply to surface water entering the spineflower preserve areas. Measures intended to maintain the existing hydrology of the spineflower preserves are discussed in more detail in the subsection, *Changes in Hydrology*, below; and
4. Using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

Although the Project design features described above will help control Argentine ant invasion into the spineflower preserves, there is still a potential for invasions to occur where typical soil moisture increases above about 10% saturation. Invasions by Argentine ants, if they occur, are reversible under appropriate conditions. Menke and Holway (2006) demonstrated that Argentine ant abundance systematically declined in experimentally irrigated areas over a few months once the irrigation was terminated. If soil moisture can be restored to 10% saturation or less, Argentine ant abundances will decrease. In areas where Argentine ant invasions have occurred, soil moisture will be required to be reduced to 10% saturation or less.

The threat of Argentine ants and the associated control measures are discussed in more detail in the document *Relationship of Argentine Ant to Conserved San Fernando Valley Spineflower Populations*, attached as **Appendix C** of the SCP (Dudek 2007E).

The proposed SCP, which incorporates the aforementioned mitigation measures, will require quarterly monitoring for Argentine ants along the urban–open space interface at sentinel locations where invasions could occur (*e.g.*, where moist microhabitats that attract Argentine ants may be created) following the completion and occupancy of a development area. Based on a study by Suarez *et al.* (2001), Argentine ant populations disperse at a rate of approximately 15 to 270 meters (approximately 49 to 886 feet) per year; therefore, quarterly monitoring for Argentine ants should be adequate to detect incipient invasions. A qualified biologist shall determine the monitoring locations. Ant pitfall traps will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, the qualified biologist shall distinguish between foraging ants versus nesting ants and implement appropriate direct control measures immediately to help prevent the invasion from worsening. These direct controls may include but would not be limited to nest/mound insecticide treatment, focused broadcast application of insecticides over large infested areas, or available natural control methods being developed. A general reconnaissance of the infested area will also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, and collected water.

According to the CBI SFVS buffer study (CBI 2000), the combined effectiveness of measures intended to minimize the effects of invasive animals on spineflower preserves would be low with a buffer less than 50 feet wide and would be moderate with a buffer between 80 and 300 feet wide. The study did not identify any buffer width at which these management measures would be considered highly effective. Because the proposed SCP will provide a minimum buffer of 80 feet and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and

greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects from non-native, invasive animals around spineflower preserves should be moderately effective.

Vegetation Clearing

No vegetation clearing will be permitted within spineflower preserves, with the exception of habitat management activities for the benefit and the maximum preservation of SFVS populations. No development-associated FMZs shall be allowed in the spineflower preserve areas. Controlled burning may be allowed in the future within the Newhall Ranch spineflower preserve areas and buffers, provided that it is based upon a burn plan prepared by the SFVS preserve manager and approved by the County of Los Angeles Fire Department and CDFG. Annual maintenance of FMZs will be exclusively outside the preserve boundaries. Removal of undesirable non-native plants and other activities in SFVS preserve buffer areas that ensure the long-term survival of SFVS, will be the responsibility of the spineflower preserve manager. The Homeowners Association (HOA) will be responsible for any fuel modification that occurs in designated FMZs.

In addition, spineflower preserve temporary fencing shall be shown on construction plans and installed prior to initiating construction clearing and grubbing activities within 200 feet of spineflower preserves. The spineflower preserve manager or a qualified biologist shall monitor fence installation. Clearing for fence installation shall be minimized to what is necessary to install the fence, and where possible shall leave the roots of native plants in place to allow re-growth. As necessary, native vegetation will be restored and weed management shall be performed following fence installation to ensure that temporarily cleared native plant areas do not become weed dominated after installation.

According to the CBI SFVS buffer study (CBI 2000) prepared for Ahmanson Ranch, and applicable here, the combined effectiveness of measures intended to minimize the effects of vegetation clearing on spineflower preserves would be low when the buffer is less than 50 feet wide, moderate with a buffer between 80 and 100 feet wide, and high in situations where buffer width exceeds 200 feet. Because the proposed SCP would provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower

preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects from vegetation clearing around spineflower preserves should be moderately to highly effective.

Trampling

The proposed SCP and associated mitigation measures mentioned above will require the installation of fencing and signage to minimize trampling of SFVS populations. Fencing shall be installed along the outside edge of the spineflower preserve and buffer areas adjacent to proposed developments, parks, golf courses, or other "active land uses" to prevent unauthorized access. Specific areas that are adequately protected by steep terrain (1.5:1 or steeper) and/or dense vegetation may not require fencing but will require signage. The determination of the need for fencing in these areas shall be subject to the approval of the spineflower preserve manager or a qualified biologist. If monitoring determines that slope and/or vegetation does not effectively deter unauthorized access, additional fencing may be required to be added by the spineflower preserve manager or a qualified biologist. Fencing is not required in areas bordered by large parcels of conserved natural open space areas, or the Santa Clara River corridor, as installing fencing in these areas would be unnecessary and damaging to existing vegetation and wildlife corridors.

Fencing must extend a minimum of four feet above grade and include wood-doweled split rail fencing; exterior grade, heavy duty, vinyl three-railed fencing; three-strand non-barbed wire; or similar. Fencing installed adjacent to native vegetation communities and natural open space areas will allow for the passage of animals.

Outdoor all-weather signs measuring approximately 12 by 16 inches shall be posted on all spineflower preserve access gates and along spineflower preserve fencing at approximately 800 feet on center, except adjacent to road crossings, where signs will be posted. The placement will take topography into account, emphasizing placement on ridgelines where they will be visible to emergency fire personnel and others. Signs shall state in English and Spanish that the area is a biological preserve that hosts a state-listed endangered and federal candidate plant species and that trespassing is prohibited (in accordance with Newhall Ranch Specific Plan Program EIR Mitigation Measure SP-4.6-68). Signs shall indicate that fuel modification and management work is not allowed within the spineflower preserve or buffer areas. Signage at trailheads shall describe the spineflower preserve, its purpose, and the applicable rules of conduct within the spineflower preserve. The signage shall state that people not abiding by these rules or who

damage the protected species will be subject to prosecution, including fines and/or imprisonment. All signage shall include emergency contact information and shall be reviewed and approved by the spineflower preserve manager or a qualified biologist.

According to the CBI SFVS buffer study (CBI 2000), the combined effectiveness of measures intended to minimize the effects of trampling on spineflower preserves would be moderate when the buffer is less than 50 feet wide and would be high in situations where buffer width exceeds 80 feet. Because the proposed SCP would provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects from trampling should be highly effective.

Changes in Hydrology

The proposed SCP and associated mitigation measures mentioned above require that pre-development hydrology conditions be maintained in the spineflower preserve areas. Project-specific design measures will be implemented in order to minimize changes in surface water flows to the spineflower preserve areas. Roadways will be constructed with slopes that convey water flows within the roadway easements and away from spineflower preserve areas. French drains will be installed along the edge of any roadways and fill slopes that drain toward the spineflower preserve areas. Where manufactured slopes drain toward the spineflower preserve(s), a temporary irrigation system will be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self sustaining. Underground utilities will not be located within or through the spineflower preserve areas. Drainage pipes installed within the spineflower preserve areas away from SFVS populations to convey surface or subsurface water away from the populations will be aligned to avoid the spineflower preserve areas to the maximum extent practicable. Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the spineflower preserve areas shall incorporate footing designs that minimize moisture collection.

Storm drain outfalls from proposed development areas shall only be installed within spineflower preserve areas where necessary to retain pre-construction hydrologic conditions within the spineflower preserves, sustain existing riparian and wetland vegetation communities, and/or allow for the restoration of currently disturbed areas to the native riparian/alluvial vegetation community. Additionally, storm drains will not be permitted to daylight at the bottom of slopes within spineflower preserve areas. When located in a spineflower preserve area, storm drains must meet the following criteria:

1. Storm drains must not impact SFVS either directly or indirectly;
2. Storm drains may only daylight at the bottom of slopes within spineflower preserve areas; and
3. Under no circumstances shall storm drains daylight onto steeply sloped areas or other areas that would cause erosion.

Any surface water entering a spineflower preserve area from development areas is required to pass through BMP measures, which will be described in the SWPPP. Storm drain outlets must contain adequate energy dissipaters to prevent downstream erosion and stream channel down-cutting. In addition, storm drain outlets must be designed based on pre- and post-construction hydrologic studies (in accordance with Newhall Ranch Specific Plan Program EIR Mitigation Measure SP-4.6-69). Storm drains and permanent structural BMP measures shall be designed by a licensed civil engineer. Required BMPs, where applicable, shall be incorporated into the facility design and shall be subject to approval by the spineflower preserve manager or a qualified biologist. Long-term maintenance of storm drain BMPs will be the responsibility of the designated maintenance entity.

According to the CBI SFVS buffer study (CBI 2000), the combined effectiveness of measures intended to minimize the effects of artificially increased water supply on spineflower preserves would be low when the buffer is less than 50 feet wide, moderate with a buffer between 80 and 100 feet wide, and high in situations where buffer width exceeds 200 feet. Because the proposed SCP would provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves

for Alternative 7, the measures proposed to minimize effects from hydrologic changes around spineflower preserves should be moderately to highly effective.

Chemical Pollutants

The proposed SCP and associated mitigation measures mentioned above provide for the establishment of buffers around portions of the delineated spineflower preserve(s) not connected to Open Area, the River Corridor SMA, or the High Country SMA land use designations; these buffers will serve to attenuate the effects of any chemical contamination originating in surrounding developed areas. In addition, the SCP and associated mitigation measures contain provisions for erosion control plans, dust control plans, and an overall Project SWPPP intended to prevent erosion, sedimentation, or runoff caused by development from affecting the spineflower preserve locations. These provisions will be included on construction plans and will be reviewed by the spineflower preserve manager, or a qualified biologist, prior to construction within 200 feet of spineflower preserves. Any surface water entering a spineflower preserve area from development areas is required to pass through BMP measures, which will be described in the SWPPP.

According to the CBI SFVS buffer study (CBI 2000), the combined effectiveness of measures intended to minimize the effects of chemical pollutants on spineflower preserve areas would be low when the buffer is less than 15 feet wide, moderate with a buffer between 30 and 50 feet wide, and high in situations where buffer width exceeds 80 feet. Because the proposed SCP will provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects from chemical pollutants entering spineflower preserves should be highly effective.

Increased Fire Frequency

The proposed SCP and associated mitigation measures mentioned above will permit the use of limited fuel modification activities within the spineflower preserves, which will be restricted to selective thinning with hand tools to allow the maximum preservation of SFVS populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower

preserve areas. All FMZs associated with the adjacent development shall be located outside of proposed spineflower preserves. Controlled burning may be allowed in the future within the Newhall Ranch spineflower preserve areas and buffers, provided that it is based upon a burn plan approved by the County of Los Angeles Fire Department and CDFG. The plant palette authorized for use in FMZs within 100 feet of spineflower preserves shall be reviewed by the spineflower preserve manager or a qualified biologist to ensure that the proposed landscape plants will not naturalize and cause maintenance or vegetation community degradation in the spineflower preserve and buffer areas. By locating FMZs at the interface between spineflower preserve areas and proposed development, these zones will serve the dual purpose of providing fire protection and additional SFVS buffer area.

In the event that a spineflower preserve or a portion of a spineflower preserve burns in a wildfire, the spineflower preserve manager and Newhall Land shall promptly review the site and determine what action, if any, should be taken. The primary anticipated post-fire spineflower preserve management activity involves monitoring the site and controlling annual weeds that may invade burned areas following a fire event, especially when such weeds that were not previously present or not present in similar densities present an imminent threat to the survival of SFVS populations. If fire-control lines or other forms of bulldozer damage occur in the spineflower preserves, these areas will be repaired and revegetated to pre-burn conditions or better. An Emergency Fire Response Plan will be prepared (in accordance with Newhall Ranch Specific Plan Program EIR Mitigation Measure SP-4.6-72) prior to the establishment of the spineflower preserves and approved by CDFG and Los Angeles County Fire Department.

Management responses to wildfire and/or geologic events will be informed by the results of adaptive management activities related to non-native plants, fire suppression, fire exclusion, and the disruption of the natural soil-disturbance regime. In general, however, a burned site will be left to recover naturally from wildfire or geologic events. The coastal scrub habitat types within the spineflower preserves are well adapted to recover from wildfires unless the fire frequency is artificially increased (Holland 1986). Therefore, burned areas shall not be seeded or sprayed with soil stabilizer, straw, or hay. The latter two items are usually contaminated with various problematic weed seeds and often include noxious weed seed. It should be noted that several species of weeds not considered to be noxious by the USDA may be considered a noxious weed in natural spineflower preserve areas and, if introduced, would be very expensive to control/eradicate. In addition, active post-fire revegetation and soil stabilization efforts interfere with natural post-fire successional species and vegetation development stages that should be allowed to occur in order for the habitat to properly recover and regenerate.

Erosion-control devices, including seeding, straw wattles, and soil tackifiers, should be avoided following a fire event for the aforementioned reasons. An exception to this would be fires that occur at a higher-than-average frequency, which may artificially accelerate erosion processes. This situation is to be evaluated by the spineflower preserve manager. Imminent and

unavoidable threats to human health, safety, and welfare represent another exception to this passive management approach in post-fire conditions. Fire frequencies have a tendency to increase at the urban–wildland interface. If the spineflower preserves are subject to a greater-than-natural fire frequency, the guidelines outlined herein shall be followed to help ensure that the spineflower preserves recover to a natural state.

According to the CBI SFVS buffer study (CBI 2000), the combined effectiveness of measures intended to minimize the effects of increased fire frequency on spineflower preserve areas would be low when the buffer is less than 50 feet wide and would be moderate in situations where buffer width exceeds 80 feet. The study did not identify a buffer width sufficient for these measures to achieve a high level of effectiveness because wildfires are more unpredictable and difficult to control. Because the proposed SCP will provide a minimum buffer of 80 feet, and a buffer greater than 100 feet in width for 95.9% and greater than 200 feet for 53.3% of the area occupied by SFVS within the spineflower preserves for Alternative 2, a buffer greater than 100 feet in width for 95.7% and greater than 200 feet for 54.7% of the area occupied by SFVS within the spineflower preserves for Alternative 3, a buffer greater than 100 feet in width for 94.7% and greater than 200 feet for 54.0% of the area occupied by SFVS within the spineflower preserves for Alternative 4, a buffer greater than 100 feet in width for 94.9% and greater than 200 feet for 51.9% of the area occupied by SFVS within the spineflower preserves for Alternative 5, a buffer greater than 100 feet in width for 98.8% and greater than 200 feet for 89.6% of the area occupied by SFVS within the spineflower preserves for Alternative 6, and a buffer greater than 100 feet in width for 97.8% and greater than 200 feet for 89.9% of the area occupied by SFVS within the spineflower preserves for Alternative 7, the measures proposed to minimize effects of wildfires on spineflower preserves should be moderately effective.

The establishment of the system of spineflower preserves, along with the long-term monitoring and management measures, described above, will mitigate to less than significant all secondary impacts to the spineflower preserve areas and SFVS individuals within the preserves.

All specific mitigation measures for SFVS are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures, as well as in the SCP.

IMPACT 4.5-165 IMPACTS TO INDIVIDUALS – SAN FERNANDO VALLEY SPINEFLOWER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, or mitigate the loss of SFVS individuals.

Focused Surveys

SP-4.6-53 requires current, updated, site-specific surveys for rare, threatened, or endangered plant or animal species determined to be on a site for which any subdivision map proposing construction has been submitted. These surveys were conducted from 2002 to 2007, as described above, in accordance with the requirements set forth in Mitigation Measure SP-4.6-59, which requires consultation with CDFG at specific milestones. These two measures help to minimize impacts to SFVS. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Spineflower Mitigation Area Overlay

SP-4.6-65 requires the applicant to design subdivision maps that are responsive to the characteristics of the SFVS and other endangered plant species and to agree to the identified special study areas.

Spineflower Preserves

SP-4.6-66 requires that direct impacts to known SFVS populations within the Specific Plan area be avoided or minimized through the establishment of one or more on-site spineflower preserves delineated in consultation with the County and CDFG and configured to ensure the continued existence of the species in perpetuity.

SP-4.6-80 specifies that the applicant shall establish an appropriately sized preserve area at San Martinez Canyon to protect the spineflower population at San Martinez Canyon.

Connectivity, Reserve Design and Buffers

SP-4.6-67 requires that indirect impacts associated with the interface between the preserved spineflower populations and planned development be avoided or minimized by establishing open space connections with the Open Area, River Corridor SMA, or High Country SMA and establishing buffers around portions of the spineflower preserve(s) not connected to Open Area, the River Corridor SMA, or the High Country SMA; open space connection and buffers shall be revegetated to mitigate for temporary disturbance due to grading.

Preserve Protection/Fencing

SP-4.6-68 requires temporary orange fencing and prohibitive signage around spineflower preserves, open space connections, and buffer areas adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for storage associated with construction activities. Following the final phase of construction, permanent fencing shall be installed on the spineflower preserve boundary.

Preserve Protection/Hydrologic Alterations

SP-4.6-69 addresses indirect impacts resulting from changes to hydrology at the interface between the spineflower preserves and planned development, requiring that they be avoided or mitigated. This standard will be met through the demonstration that the storm drain system achieves pre-development hydrologic conditions for the spineflower preserve(s).

Road Construction Measures

SP-4.6-70 specifies the redesign or realignment of roads to avoid or substantially lessen direct impacts to SFVS populations and to achieve the standards set forth in Mitigation Measures SP-4.6-66 and SP-4.6-67. Roadways and road rights-of-way shall not be constructed in any spineflower preserves or buffer locations.

Engineering, Design and Grading Modifications

SP-4.6-71 states that direct impacts to SFVS populations shall be further assessed at the subdivision map level. To avoid or substantially lessen impacts to SFVS populations, development footprints, roadway alignments, and project-specific grading may be adjusted to achieve spineflower preserve and connectivity/preserve design/buffer standards.

Fire Management Plan

SP-4.6-72 requires that a fire management plan be developed to avoid and minimize impacts to SFVS and to protect and manage the spineflower preserves and buffers. Fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools.

Water Flow Diversion and Management

SP-4.6-73 states that the subdivision map shall implement project-specific design measures to minimize changes in surface water flows to the spineflower preserves.

Reassessment Requirement

SP-4.6-76 states that the applicant shall reassess the impacts to SFVS populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR, and data from updated plant surveys in conjunction with the first Newhall Ranch subdivision map submittal. If the reassessment results in the identification of new or additional impacts, the mitigation measures set forth in this program or a Fish and Game Code section 2081 permit shall be required.

Newhall Ranch Monitoring and Management

SP-4.6-77 directs the applicant to prepare a monitoring and management plan in consultation with CDFG for the impacts to SFVS populations. This plan shall be in place when the spineflower preserve(s) and connectivity/preserve design/buffers are established The plan shall include monitoring, reporting, and management.

Translocation/Reintroduction Program

SP-4.6-78 requires implementation of a translocation and reintroduction program in consultation with CDFG to mitigate for direct impacts at a 4:1 ratio and indirect impacts at 1:1 ratio when project-related direct and indirect impacts to SFVS cannot be avoided or lessened.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to avoid, minimize, or mitigate direct and indirect impacts due to loss of SFVS individuals.

Establishment and Oversight of Spineflower Preserves

BIO-23 and BIO-24 provide for the placement of the spineflower preserve areas into a permanent conservation easement and provide for the management of the spineflower preserve areas.

Restoration and Enhancement of Spineflower Preserves

BIO-25 describes restoration of disturbed portions of the spineflower preserves through revegetation with native plant communities. Areas that have greater than 30% absolute cover by weeds will be restored to have at least 70% absolute cover by native species. Cal-IPC List A and B plants that are present within the spineflower preserves will be controlled.

Emergency Fire Response Plan

BIO-26 requires preparation of an emergency fire response plan prior to the establishment of the spineflower preserves and approval by CDFG and Los Angeles County Fire Department. In the event that a spineflower preserve or a portion of a spineflower preserve burns in a wildfire or suffers from mass movements (*e.g.*, landslides, slope sloughing, or other geologic events), the spineflower preserve manager and Newhall Land shall promptly review the site and determine what action, if any, should be taken.

Preserve Protection/Access

BIO-35 through BIO-37 provide guidelines for the installation of permanent fencing and signage for the spineflower preserves. All portions of the spineflower preserves shall be closed with the

exception of pre-identified existing dirt roads and utility easements. Fencing shall be installed along the outside edge of the spineflower preserve and buffer areas, although specific areas adequately protected by steep terrain (1.5:1 or steeper) and/or dense vegetation may not require fencing but will require signage. Outdoor all-weather signs (12 by 16 inches) shall be posted on spineflower preserve access gates and adjacent to road crossings, and along spineflower preserve fencing at 800-foot intervals.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, direct impacts to SFVS individuals under Alternative 2 will remain significant. Implementation of Alternative 2 creates significant unavoidable impacts.

After mitigation, direct impacts due to the loss of SFVS individuals will be adverse but not significant for Alternatives 3, 4, 5, 6, and 7 because the percentage of preserved SFVS cumulative occupied area would be expanded, and the protected unoccupied acreage would be expanded.

IMPACT 4.5-166 SECONDARY IMPACTS – SAN FERNANDO VALLEY SPINEFLOWER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate secondary impacts to SFVS.

Focused Surveys

SP-4.6-53 requires current, updated, site-specific surveys for rare, threatened, or endangered plant or animal species determined to be on a site for which any subdivision map proposing construction has been submitted. These surveys were conducted from 2002 to 2007, as described above, in accordance with the requirements set forth in Mitigation Measure SP-4.6-59, which requires consultation with CDFG at specific milestones. These two measures help to minimize impacts to SFVS.

Spineflower Mitigation Area Overlay

SP-4.6-65 requires the applicant to design subdivision maps that are responsive to the characteristics of SFVS and other endangered plant species and to agree to the identified special study areas.

Spineflower Preserves

SP-4.6-66 requires that direct impacts to known SFVS populations within the Specific Plan area be avoided or minimized through the establishment of one or more on-site spineflower preserves delineated in consultation with the County and CDFG and configured to ensure the continued existence of the species in perpetuity.

SP-4.6-80 specifies that the applicant shall establish an appropriately sized preserve area at San Martinez Canyon to protect the spineflower population at San Martinez Canyon.

Connectivity, Preserve Design, and Buffers

SP-4.6-67 requires that indirect impacts associated with the interface between the preserved spineflower populations and planned development be avoided or minimized by establishing open space connections with the Open Area, River Corridor SMA, or High Country SMA and establishing buffers around portions of the spineflower preserve(s) not connected to Open Area, the River Corridor SMA, or the High Country SMA; open space connection and buffers shall be revegetated to mitigate for temporary disturbance due to grading.

Preserve Protection/Fencing

SP-4.6-68 requires temporary orange fencing and prohibitive signage around spineflower preserves, open space connections, and buffer areas adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for storage associated with construction activities. Following the final phase of construction, permanent fencing shall be installed on the spineflower preserve boundary.

Preserve Protection/Hydrologic Alterations

SP-4.6-69 addresses indirect impacts resulting from changes to hydrology at the interface between the spineflower preserves and planned development, requiring that they be avoided or mitigated. This standard will be met through the demonstration that the storm drain system achieves pre-development hydrologic conditions for the spineflower preserve(s).

Road Construction Measures

SP-4.6-70 specifies the redesign or realignment of roads to avoid or substantially lessen direct impacts to SFVS populations and to achieve the standards set forth in Mitigation Measures SP-4.6-66 and SP-4.6-67. Roadways and road rights-of-way shall not be constructed in any spineflower preserves or buffer locations.

Engineering, Design and Grading Modifications

SP-4.6-71 states that direct impacts to SFVS populations shall be further assessed at the subdivision map level. To avoid or substantially lessen impacts to SFVS populations, development footprints, roadway alignments, and project-specific grading may be adjusted to achieve spineflower preserve and connectivity/preserve design/buffer standards.

Fire Management Plan

SP-4.6-72 requires that a fire management plan be developed to avoid and minimize impacts to SFVS and to protect and manage the spineflower preserves and buffers. Fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools.

Water Flow Diversion and Management

SP-4.6-73 states that the subdivision map shall implement project-specific design measures to minimize changes in surface water flows to the spineflower preserves.

Biological Monitor

SP-4.6-74 requires that an experienced biologist/botanist monitor grading and fence/utility installation activities that involve earth movement adjacent to the spineflower preserves biweekly, to avoid incidental take of conserved plant species and to avoid disturbance of the preserves.

Construction Impact Avoidance Measures

SP-4.6-75 requires implementation of water control, stormwater flow redirection, and treatment of exposed, graded slopes during all construction phases to avoid and minimize indirect impacts to the spineflower preserves.

Reassessment Requirement

SP-4.6-76 states that the applicant shall reassess the impacts to SFVS populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR (County of Los Angeles 2003A), and data from updated plant surveys in conjunction with the first Newhall Ranch subdivision map submittal. If the reassessment results in the identification of new or additional impacts, the mitigation measures set forth in this program or a Fish and Game Code section 2081 permit shall be required.

Newhall Ranch Monitoring and Management

SP-4.6-77 directs the applicant to prepare a monitoring and management plan in consultation with CDFG for the impacts to SFVS populations. This plan shall be in place when the

spineflower preserve(s) and connectivity/preserve design/buffers are established. The plan shall include monitoring, reporting, and management.

Translocation/Reintroduction Program

SP-4.6-78 requires implementation of a translocation and reintroduction program in consultation with CDFG to mitigate for direct impacts at a 4:1 ratio and indirect impacts at a 1:1 ratio when project-related direct and indirect impacts to SFVS cannot be avoided or lessened.

Ongoing Agricultural Activities

SP-4.6-79 requires the applicant to engage in regular consultation with the County and CDFG in connection with its ongoing agricultural operations to avoid or minimize significant direct impacts to the spineflower, and to provide 30 days advance written notice to the County and CDFG of the proposed conversion of its ongoing rangeland operations on Newhall Ranch to more intensive agricultural uses.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to avoid, minimize, or mitigate short-term and long-term secondary impacts.

Establishment and Oversight of Spineflower Preserves

BIO-23 and BIO-24 provide for the placement of the spineflower preserve areas into a permanent conservation easement and provide for the management of the spineflower preserve areas.

Restoration and Enhancement of Spineflower Preserves

BIO-25 describes restoration of disturbed portions of the spineflower preserves through revegetation with native plant communities. Areas that have greater than 30% absolute cover by weeds will be restored to have at least 70% absolute cover by native species. Cal-IPC List A and B plants that are present within the spineflower preserve will be controlled.

Emergency Fire Response Plan

BIO-26 requires preparation of an emergency fire response plan prior to the establishment of the spineflower preserves and approval by CDFG and Los Angeles County Fire Department. In the event that a spineflower preserve or a portion of a spineflower preserve burns in a wildfire or suffers from mass movements (*e.g.*, landslides, slope sloughing, or other geologic events), the spineflower preserve manager and Newhall Land shall promptly review the site and determine what action, if any, should be taken.

Prevention of Construction-Related Impacts/Temporary Fencing

BIO-27 and BIO-31 provide guidelines for temporary fencing design, installation, monitoring, and repair.

Spineflower preserve temporary fencing—three-strand non-barbed-wire fence or bright orange U.V.-stabilized polyethylene construction "snow" fencing, attached to metal t-posts that extend at least four feet above grade or equivalent—shall be shown on construction plans and installed prior to initiating construction clearing and grubbing activities within 200 feet of spineflower preserves. Impacts to native vegetation will be minimized and native vegetation will be restored as necessary. Appropriate BMPs shall be installed at the edge of development-manufactured slopes when the spineflower preserve is within 200 feet and downslope of proposed development.

Prevention of Construction-related Impacts

BIO-28 through BIO-30 and BIO-33 minimize construction-related impacts in spineflower preserves by requiring "environmental education sessions," incorporating dust control, erosion control, and water quality plans (as required in the Project SWPPP) into construction plans and requiring weekly construction monitoring for all construction activities within 200 feet of spineflower preserve areas.

Preserve Protection/Invasive Plants and Animals

BIO-34 requires plant palettes proposed for use within 100 feet of a spineflower preserve to be reviewed by the spineflower preserve manager or a qualified biologist to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants to be installed within 200 feet of the spineflower preserves shall be inspected by the spineflower preserve manager or a qualified biologist for the presence of disease, weeds, and pests, including Argentine ants.

Preserve Protection/Access

BIO-35 through BIO-37 provide guidelines for the installation of permanent fencing and signage for the spineflower preserves. All portions of the spineflower preserves shall be closed, with the exception of pre-identified existing dirt roads and utility easements. Fencing shall be installed along the outside edge of the spineflower preserve and buffer areas, although specific areas adequately protected by steep terrain (1.5:1 or steeper) and/or dense vegetation may not require fencing but will require signage. Outdoor all-weather signs (12 by 16 inches) shall be posted on spineflower preserve access gates and adjacent to road crossings, and along spineflower preserve fencing at 800-foot intervals.

Preserve Protection/Hydrology

BIO-38 and BIO-39 specify storm drain requirements and limitations within spineflower preserve areas in order to retain pre-construction hydrologic conditions within spineflower preserves, and require that any surface water entering a spineflower preserve from the development areas pass through BMP measures as described in the SWPPP.

Argentine Ants

BIO-85 lists the following project design features and management measures to prevent invasion of Argentine ants into the spineflower preserves: (1) providing "dry zones" between urban development and spineflower populations; (2) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (3) maintaining natural hydrologic conditions in the preserves; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible. BIO-87 requires quarterly monitoring for Argentine ants along the urban–open space interface, where invasions could occur following the completion and occupancy of a development area. If Argentine ants are detected, direct control measures will be implemented immediately to help prevent the invasion from worsening. Monitoring and control of Argentine ants will occur for a 50-year period.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, secondary impacts to SFVS will be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

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UNDESCRIBED EVERLASTING (NO CURRENT STATUS)

Life History

White rabbit-tobacco (*Gnaphalium leucocephalum*, or *Pseudognaphalium leucocephalum*) is a perennial herb occurring in southeastern Arizona, southern New Mexico, much of mainland Mexico, and (in some reports) as far east as Texas. According to published and online sources in California, it also occurs in southwestern California from San Luis Obispo County south to San Diego County and Baja California, generally at relatively low elevations but sometimes to about 6,900 feet elevation AMSL (Munz 1974; Hickman 1993; Nesom 2006; CNPS 2009; Consortium of California Herbaria 2007; Lazar and Bittman 2006). Several botanists, including Andrew C. Sanders of U.C. Riverside (Sanders 2007) believe that the plants in southern California are distinct from those farther east and should be considered a separate species due to several differences in plant structure (stature, pubescence, and phyllary characters; Dudek and Associates 2004C) and its geographic distribution. The California occurrences are hundreds of miles disjunct from the eastern occurrences (it does not occur in the Sonoran or Mojave deserts between the two areas). The California plants have not been formally described in botanical literature as a distinct species or subspecies, but this EIS/EIR treats them as an undescribed species (*Gnaphalium* sp. *nova*) based on differences in plant structure.

CPNS (2009) and CDFG (2009) treat this species as white rabbit-tobacco, including it on CNPS List 2.2 and CDFG ranking G4/S2S3.2. If a future publication confirms that the California populations are distinct from species' occurrences in Arizona, New Mexico, and mainland Mexico, then the undescribed species would meet criteria for inclusion on CNPS List 1B.2.

A search of three herbaria (U.C. Riverside, Rancho Santa Ana Botanic Garden, and the San Diego Natural History Museum) by Dudek biologist Marc Doalson revealed that 14 collections of this plant have been made in Ventura, Orange, Riverside, Los Angeles, and San Diego counties. Eight collections date from 1901 to 1987 (1901, 1918, 1922, 1928, 1931, 1959, 1985, and 1987). There are six more recent collections dating from 1994 to 2003 (1994, two from 1995, 1997, and two from 2003). Many are from somewhat vague localities, such as "San Fernando Valley" and "Pasadena." Modern collections have come mostly from the Santa Ana Mountains region and especially Temescal Wash in western Riverside County, with several collections from adjacent San Diego County (Dudek and Associates 2004C). In addition to the herbaria specimens, the undescribed everlasting has been observed in 2003, 2004, 2005, and 2007 along Castaic Creek and the Santa Clara River (Dudek and Associates 2004A, 2004H, 2006F; Causey 2007) and in 2004 and 2005 in Hasley Canyon in Los Angeles County (Dudek and Associates 2004G, 2006H).

The undescribed everlasting is a short-lived perennial herb. An individual plant persists over several years as a woody rootstock. New stems and leaves are produced during winter and

spring, followed by flowering stems. Its blooming period lasts from July through December (CNPS 2009).

The undescribed everlasting occurs in relatively open, sandy alluvial soils, often being found on the benches along major washes in river wash habitat among sparse cover of non-wetlands species such as scalebroom, big sagebrush or California buckwheat. It generally is not found in streamside habitat where willows, mulefat or other riparian species tend to shade out understory herbs. In general, it is found on stable alluvial deposits above the level of the active channel. These benches may be scoured by infrequent high river flows, but tend to remain in place on a time scale of several years to a few decades or more, even during most floods. On a longer time scale, larger floods sometimes scour and rework broad areas of the floodplain, eroding the margins of alluvial benches and re-depositing the material in new sites.

Undescribed everlasting seeds are very small and light, with a plume-like awns adapted for wind dispersal. Many seeds fall in the immediate vicinity of parent plants so that its populations persist at occupied sites. But some seeds can be dispersed to new, unoccupied habitat elsewhere in the river wash. This dispersal mechanism allows the species to establish new occurrences where river hydrology creates suitable habitat at new sites.

In addition to the direct loss of individuals, undescribed everlasting is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the undescribed everlasting. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Observations of the undescribed everlasting species in 2003, 2004, and 2005 (Dudek and Associates 2004C, 2004F, 2004G, 2006F, 2006H; FL*x* 2004B) were made during surveys that focused on the identification and location of special-status plant species. Observations of the undescribed everlasting species in 2007 (Causey 2007) were made during surveys that focused on the identification and location of the undescribed everlasting species.

Focused surveys were conducted in spring and summer of 2002 through 2005, timed to be coincident with the annual blooming period for early blooming annual species. An additional survey for this species was conducted in 2007 in areas known to previously support undescribed everlasting. This survey period would overlap with the blooming period of white-headed

cudweed, which lasts from July through December (CNPS 2009). This species has definitive habitat requirements, and the surveys focused on suitable habitat. In addition, this is a conspicuous plant with a distinctive odor, and senescent or juvenile stems would have been observed during the non-blooming period.

The undescribed everlasting is almost always associated with alluvial soils, often found on the benches along major washes; therefore, it is anticipated that occurrences of this species may shift over time on site. Sandy alluvial land occurs mostly on floodplains along the Santa Clara River and its tributaries. The large storm events of 2005 and associated large flows within Castaic Creek and the Santa Clara River resulted in extensive scouring and/or removal of the terraces and benches on which the plants previously occurred along the west bank of Hasley Canyon; however, that flood event did not remove the other occurrences on site. The limited surveys covering alluvial soils and washes within the River Corridor SMA portion of the Specific Plan area in other years, and below-average rainfall in 2004, may have affected the observations of this species. Given the number of surveys conducted for this species on site in the context of storm event cycles, the cumulative survey results are representative of the distribution of this species on site.

Two main occurrences and a number of smaller occurrences of this undescribed species were documented within the Specific Plan area during the 2003, 2004, 2005, and 2007 field seasons (Dudek and Associates 2004C, 2004F, 2006F; Causey 2007; FL*x* 2004B) (**Figure 4.5-7,** RMDP/SCP – Special-Status Plant Species Occurrences, and **Figures 4.5-13** through **4.5-15,** River Corridor SMA – Special-Status Species Occurrences). These occurrences are primarily on secondary alluvial benches in the Santa Clara River near the mouth of Long Canyon and where Castaic Creek and the Santa Clara River converge, south of SR-126. In both the Specific Plan and VCC planning areas, the vegetation around these plants consists of sparsely vegetated open river wash. **Table 4.5-60** provides a summary of occurrence data for the undescribed everlasting that occur within the Specific Plan and VCC planning areas. Because several years of mapped occurrence data are available for the undescribed everlasting, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat.

Table 4.5-60
Occurrence Data for the Undescribed Everlasting that Occurs within the Specific Plan and VCC Planning Areas

	Undescribed Everlasting Individuals Observed			
Location	**2003**	**2004**	**2005**	**2007**
Specific Plan Area	530	712	805	85
High Country SMA	–	–	–	–
Salt Creek Area	–	–	–	–
RMDP (Specific Plan Area + High Country SMA + Salt Creek Area)	530	712	805	85
VCC	–	270	65	350
Entrada	–	–	–	–
TOTAL	**530**	**982**	**870**	**435**

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the direct loss of 7 individuals. Based on the results of field surveys conducted within the Project area for special-status plants from 2002 through 2005, there is only a low probability that undocumented undescribed everlasting occurrences, consisting of relatively few plants, may exist in other portions of the Project area, possibly including areas to be disturbed by construction. Direct permanent and temporary impacts (Impacts to Individuals) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the VCC planning area would result in the indirect permanent loss of 350 of the undescribed everlasting observed in 2007 (**Figure 4.5-146,** Alternative 2 Impacts to RMDP/SCP Special-Status Plants). Because no undescribed everlasting plants were observed within the Entrada planning area, build-out of the Entrada planning area is not anticipated to impact any undescribed everlasting plants. Although build-out of the Specific Plan area would not result in the loss of any documented individuals, because the undescribed everlasting is a floodplain species, the location of individuals may change prior to construction commencing. If individual locations were to change, build-out of the Specific Plan area could result in the loss of undescribed everlasting individuals. Loss of undescribed everlasting individuals within the VCC planning area and the potential loss within the Specific Plan area would be considered a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of the undescribed everlasting individuals resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 357 individuals. The loss of the undescribed everlasting occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be considered a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts to this plant associated with implementation of the RMDP and the SCP and build-out of the Specific Plan area include short-term secondary impacts such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust; and long-term impacts such as introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and hydrologic alterations and water quality impacts. No undescribed everlasting plants would remain at the VCC planning area at the time of build-out, and no undescribed everlasting plants were observed within the Entrada planning area; therefore, build-out of the VCC and Entrada planning areas is not anticipated to impact any undescribed everlasting plants. The potential loss of this undescribed everlasting species as a result of these secondary impacts within the Specific Plan area would constitute a substantial adverse effect on this species and

could substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts

The direct loss of 7 individual undescribed everlasting plants as a result of implementation of the RMDP and the SCP under Alternatives 3 through 7 would be similar to impacts under Alternative 2 (impacts to 7 individuals). Based on the results of field surveys conducted within the Project area for special-status plants from 2002 through 2005, there is only a low probability that undocumented undescribed everlasting occurrences, consisting of relatively few plants, may exist in other portions of the Project area, possibly including areas to be disturbed by construction. The relative risk of impacts to undocumented undescribed everlasting would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The direct permanent and temporary loss (Impacts to Individuals) of undescribed everlasting occurring as a result of implementation of the RMDP and the SCP would be significant, absent mitigation, for Alternatives 3 through 7.

Indirect Permanent Impacts

Under Alternative 3, build-out of the Specific Plan and VCC planning areas would result in the same indirect permanent impacts to undescribed everlasting as under Alternative 2 (loss of 350 undescribed everlasting individual) (**Figures 4.5-147** through **4.5-151**, Alternatives 3 through 7 Impacts to RMDP/SCP Special-Status Plants). Based on the results of field surveys conducted within the Project area for special-status plants from 2002 through 2005, there is only a low probability that undocumented undescribed everlasting occurrences, consisting of relatively few plants, may exist in other portions of the Project area, possibly including areas to be disturbed by construction. The indirect permanent loss of undescribed everlasting plants (Impacts to Individuals) as a result of build-out of the Specific Plan and VCC planning areas would be significant, absent mitigation, for Alternative 3. Because no undescribed everlasting plants were observed within the Entrada planning area, build-out of the Entrada planning area is not anticipated to impact any undescribed everlasting plants under Alternative 3.

Under Alternatives 4 through 7, build-out of the Specific Plan would not result in indirect permanent impacts to undescribed everlasting, a reduction compared to Alternative 2 (Alternative 2 results in the indirect loss of 350 undescribed everlasting individuals due to build-out of the VCC planning area; build-out of the VCC planning area is not a

component of Alternatives 4 through 7). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, and specifically for the undescribed everlasting in 2007, there is a low probability that undocumented undescribed everlasting occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. The relative risk of impacts to undocumented undescribed everlasting would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The indirect permanent loss of undescribed everlasting plants (Impacts to Individuals) as a result of build-out of the Specific Plan and VCC planning areas would not be significant for Alternatives 4 through 7 because no impacts would occur. Because no undescribed everlasting plants were observed within the Entrada planning area, build-out of the Entrada planning area is not anticipated to impact any undescribed everlasting plants under Alternatives 4 through 7.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts for Alternative 3 resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the loss of 357 undescribed everlasting individuals, similar to Alternative 2 (357 individuals). The combined direct and indirect permanent impacts for Alternatives 4 through 7 resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would result in the loss of 7 individuals, a reduction compared to Alternative 2 (357 individuals). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, and specifically for the undescribed everlasting in 2007, there is a low probability that undocumented undescribed everlasting occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. The relative risk of impacts to undocumented undescribed everlasting would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. The combined direct and indirect loss of the undescribed everlasting occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be considered a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and VCC (Alternative 3 only) planning

areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. Because no undescribed everlasting plants were observed within the Entrada planning area, build-out of the Entrada planning area is not anticipated to impact any undescribed everlasting plants under Alternatives 3 through 7.The loss of individual undescribed everlasting and the effect on its habitat due to secondary impacts within the Specific Plan area resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and VCC planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to the undescribed everlasting: (1) impacts to individuals, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals would occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of undescribed everlasting individuals would be 350 for Alternatives 2 and 3, and no loss of individuals for Alternatives 4 through 7. The combined permanent loss of 357 individuals would have a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. Focused surveys to be conducted prior to the commencement of grading/construction activities within suitable habitat for the undescribed everlasting will ensure that any individual plants that may have germinated in new sites or may not have been documented by previous field surveys would be located. Follow-up measures would require Newhall Land either to avoid those plants or to mitigate any impacts to them. Avoidance measures, and, if necessary, the salvage of seeds and/or transplantation of individuals identified within the disturbance area to an appropriate receptor site within the River Corridor SMA where long-term preservation is provided, shall be implemented as outlined within the undescribed everlasting mitigation and monitoring plan. In addition, mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state by restricting access and prohibiting grazing, agriculture, and recreation within the River Corridor SMA, as well as providing for the restoration and enhancement of habitat within the River Corridor SMA, will mitigate the direct and indirect loss of and/or harm to undescribed everlasting.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust;

and hydrologic alterations and water quality impacts, would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term secondary impacts to the undescribed everlasting, such as the introduction of non-native, invasive plant species and increased human activity, trampling, and soil compaction, would be minimized by providing revegetation plans for the River Corridor SMA placing restrictions on plant palettes proposed for use on landscaped slopes; by restricting access to, grazing within, and recreational usage of the River Corridor SMA; and by providing for transition areas along the River Corridor SMA.

All specific mitigation measures for the undescribed everlasting species are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-167 IMPACTS TO INDIVIDUALS – UNDESCRIBED EVERLASTING

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, and/or mitigate the loss of the undescribed everlasting.

The undescribed everlasting is associated with the Santa Clara River and Castaic Creek and, where this species occurs in jurisdictional areas, the following mitigation measures will apply.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In addition to the restoration and avoidance mitigation measures described above, the undescribed everlasting will benefit from the following preservation and management mitigation measures. SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to reduce the loss of and harm to the undescribed everlasting.

To mitigate for the removal of individuals during construction, BIO-75 requires pre-construction focused surveys for the undescribed species of everlasting within suitable habitat for the species. The surveys shall be conducted up to one year prior to commencement of construction activities. Should the species be documented within the Project boundary, avoidance measures shall be implemented to minimize impacts to individual plants wherever feasible. These measures shall include minor adjustments to the boundaries/location of haul routes and other Project features. If, due to Project design constraints, avoidance of all plants is not possible, then further measures, described in BIO-76, shall be implemented to salvage seeds and/or transplant individual plants. BIO-76 states that prior to the issuance of grading permits, the applicant shall develop an Undescribed Everlasting Mitigation and Monitoring Plan to be implemented if surveys conducted in accordance with BIO-75 are positive. The Plan shall provide for replacement of individual plants to be removed at a minimum 1:1 ratio, within suitable habitat at a site where no future construction-related disturbance will occur. The Plan shall specify requirements for the selection of the mitigation site; methods for harvesting seeds or salvaging and transplantation of individual plants; site preparation procedures; a schedule and action plan to maintain and monitor the mitigation area; criteria and performance standards; measures to exclude unauthorized entry into the mitigation areas; and contingency measures.

In addition to mitigation measures requiring replacement of individual plants, the undescribed everlasting is associated with jurisdictional areas along the Santa Clara River and Castaic Creek and, where this species occurs in jurisdictional areas, the following mitigation measures will apply. BIO-1 through BIO-16 include requirements for the development and implementation of mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of

success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts associated with the loss of individuals of the undescribed everlasting species would be adverse but not significant for alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-168 SECONDARY IMPACTS – UNDESCRIBED EVERLASTING

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the undescribed everlasting.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-20, which states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

In order to avoid and minimize impacts due to hydrologic alterations and water quality impacts, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure 4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts due to the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7 and SP-4.6-19:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation; that native riparian plants be incorporated into landscaping where feasible; that roads and bridges be designed to discourage access to River Corridor SMA; that bank stabilization be composed of ungrouted rock; and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

In order to avoid and minimize impacts due to increased human activity and trampling and the compaction of soils, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, and SP-4.6-24:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area.

Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate secondary impacts to the undescribed everlasting.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45 and BIO-52:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements, conduct meetings with contractor describing the importance of restricting work to the restricted areas, discuss procedures for minimizing harm to or harassment of wildlife, review the construction area in the field with the contractor in accordance with the final grading plan, conduct a final field review of staking, be present during initial vegetation clearing and grading, and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to further avoid and minimize impacts from dust, runoff, and sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction, as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution and with hydrologic alterations and water quality impacts would also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-73, which requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

In order to address both short-term and long-term secondary impacts to this species, this EIS/EIR identifies Mitigation Measure BIO-75 and BIO-76:

To mitigate for the removal of individuals during construction, BIO-75 requires pre-construction focused surveys for the undescribed species of everlasting within suitable habitat for the species. The surveys shall be conducted up to one year prior to commencement of construction activities. Should the species be documented within the Project boundary, avoidance measures shall be

implemented to minimize impacts to individual plants wherever feasible. These measures shall include minor adjustments to the boundaries/location of haul routes and other Project features. If, due to Project design constraints, avoidance of all plants is not possible, then further measures, described in BIO-76, shall be implemented to salvage seeds and/or transplant individual plants. BIO-76 states that prior to the issuance of grading permits, the applicant shall develop an Undescribed Everlasting Mitigation and Monitoring Plan to be implemented if surveys conducted in accordance with BIO-75 are positive. The Plan shall provide for replacement of individual plants to be removed at a minimum 1:1 ratio, within suitable habitat at a site where no future construction-related disturbance will occur. The Plan shall specify requirements for the selection of the mitigation site; methods for harvesting seeds or salvaging and transplantation of individual plants; site preparation procedures; a schedule and action plan to maintain and monitor the mitigation area; criteria and performance standards; measures to exclude unauthorized entry into the mitigation areas; and contingency measures.

Each potential secondary impact would also be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include Mitigation Measures BIO-1 through BIO-16 and BIO-73:

BIO-1 through BIO-16 include requirements for the development and implementation of mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to the undescribed everlasting species would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

UNDESCRIBED SUNFLOWER (NO CURRENT STATUS)

Life History

In June 2002, undescribed sunflower (*Helianthus* sp. *nova*) plants were observed growing in a seep area south of the Santa Clara River between Middle Canyon and San Jose Flats (Dudek and Associates 2002A) (**Figure 4.5-14,** River Corridor SMA – Special-Status Species Occurrences; **Figure 4.5-23,** Middle Canyon Spring– Vicinity Map; **Figure 4.5-24,** Middle Canyon Spring– Existing Conditions). A specimen was collected and sent to the herbarium at the University of California at Berkeley, where it was determined to be Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) by Dr. John Strother (Errter 2002). Los Angeles sunflower was last seen in 1937 and was presumed to be extinct (CNPS 2007). Then the plant specimen (and other specimens) was then sent to Dr. Loren Rieseberg and Dr. Charles Heiser at the University of Indiana and was identified as Nuttall's sunflower (*Helianthus nuttallii* ssp. *nuttallii*), which is a more common sunflower species. Based on pollen electron microscopy and chromosome counts, it is likely that the undescribed sunflower species in question is a hybrid between *H. nuttallii* and California sunflower (*H. californicus*) or an intermediate evolutionary step between the two species (Porter and Fraga 2004). Dr. David Keil, editor of the sunflower family for the upcoming revised edition of the Jepson Manual, plans to publish a formal description of the plant, treating it as a new species (Keil 2006). Upon publication and formal recognition, the undescribed sunflower would immediately meet criteria for listing as threatened or endangered under state and federal Endangered Species Acts.

Currently, very little is known about the ecology of this sunflower. This rhizomatous perennial grows in water-saturated soil and gravel along the margin of a slight rise within the Middle Canyon Spring, which drains into the south side of the Santa Clara River just upstream of its confluence with Castaic Creek. During surveys conducted by Dudek in September 2002, the ground was cool and completely wet, during the driest year in recorded history; therefore, the area is likely to be wet all year long (Dudek and Associates 2002A). This sunflower grows to a height of 10 to 16 feet, rising above surrounding vegetation, and remains in the sun throughout most of the day. Honey bees, cabbage white butterflies, and damselflies were observed visiting these flowers in 2002 (Dudek and Associates 2002A). The blooming period of the related Nuttall's sunflower is July through September, and for California sunflower is June through October (Munz 1974). The undescribed sunflower has been observed to bloom in August and September (Dudek and Associates 2002A).

Because this species is only known to occur in one location, and that is within Middle Canyon Spring, which is supported by groundwater, it would seem that a major threat to the undescribed sunflower would include any changes to groundwater hydrology that could impact groundwater and surface water quantity and quality at the spring. Proposed development could remove native vegetation upslope, increase runoff from roads and other paved surfaces, and result in an increase

in ornamental landscaping and lawns, all of which ultimately lead to increased irrigation. In addition to the immediate adverse effects that would occur to the sunflower as a result of changes in the hydrology of the spring, these consequences can result in increased erosion and transport of surface matter into known undescribed sunflower populations. Altered erosion, increased surface flows, and underground seepage could allow for the establishment of non-native plants. Non-native plant species, which compete for light, water, and nutrients, have also been found to invade native vegetation communities and to become established after repeated burnings, clearing of vegetation, or trampling or following periods of drought and overgrazing—possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of native species such as the undescribed sunflower.

Survey Results

Observations of the undescribed sunflower species in 2002 (Dudek and Associates 2002A) were made during surveys that focused on the identification and location of special-status plant species. Ten individual undescribed sunflower individuals were observed growing in three to five rhizomatous groups. The undescribed sunflower was observed again in 2004 (FL*x* 2004A).

Focused surveys were conducted in the spring and summer of 2002 through 2007, timed to coincide with the annual blooming period for early-blooming annual species. The surveys typically began in April and extended through August. The precise blooming period for the undescribed sunflower is not known, and different *Helianthus* species bloom at a wide variety of periods throughout the year. The blooming periods of the related Nuttall's sunflower and California sunflower both occur in mid summer (USDA 2007 and USDI 2007, respectively) and partially overlapped with some of the survey periods. The extension of the undescribed sunflower's blooming period beyond the field survey season may have affected observations of this species. This species has definitive habitat requirements, and the surveys focused on suitable habitat. In addition, this is a large, conspicuous plant, and senescent or juvenile stems would have been observed during the non-blooming period.

Surveys conducted by Dudek from 2003 through 2007 did not include the Middle Canyon Spring. Only surveys conducted by FL*x* in 2004 (FL*x* 2004A), a year of below-average rainfall (October 2003–September 2004; WRCC 2007), comprehensively covered the River Corridor SMA and the Middle Canyon Spring. The lack of surveys conducted at Middle Canyon Spring in other years and the below-average rainfall in 2004 may have affected the observations of this species. Because several years of mapped occurrence data are available for the undescribed sunflower, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would not result in the direct loss of individuals of the undescribed sunflower species, which is only known to occur within the Middle Canyon Spring. The spring is within a portion of the River Corridor SMA. No undescribed sunflower individuals or habitat are expected to occur within the RMDP or the SCP development area. A span bridge, abutment, and flood control modification within the Middle Canyon drainage would be installed adjacent to the spring as part of the RMDP. Implementation of the RMDP and the SCP would not result in a substantial adverse effect on this species and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Direct permanent and temporary impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Indirect Permanent Impacts

This species is only known to occur within the Middle Canyon Spring and no undescribed sunflower individuals or habitat occur within the Specific Plan development area; therefore, build-out of the Specific Plan area would not result in the loss of any undescribed sunflower plants. This species has not been observed within the VCC and Entrada planning areas; therefore, build-out of the VCC and Entrada planning areas is not anticipated to result in the loss of any undescribed sunflower plants. Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because no impacts would occur.

Combined Direct and Indirect Permanent Impacts

This species is only known to occur within the Middle Canyon Spring and no undescribed sunflower individuals or habitat occur within the RMDP and SCP development area or the Specific Plan development area. None of these individuals would be directly or indirectly lost as a result of implementing the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as the undescribed sunflower has not been identified in the Project development area.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and the build-out of the Specific Plan, VCC, and Entrada planning areas include short-term and long-term impacts. Potential short-term impacts resulting from construction-related activities include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts. Potential long-term impacts resulting from the build-out of the Specific Plan development area include the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. No undescribed sunflower plants have been observed within the VCC and Entrada planning areas; therefore, no loss of undescribed sunflower is expected to occur due to build-out of these developments. The potential loss of this undescribed sunflower species as a result of these secondary impacts would constitute a substantial adverse effect on this species and could substantially reduce the number and restrict the range of this species (significance criteria 1 and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts and Indirect Permanent Impacts

The potential for loss of individual undescribed sunflower plants as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would

essentially be similar to Alternative 2 impacts (no known occurrences would be impacted). The undescribed sunflower is only known to occur within the Middle Canyon Spring within the River Corridor SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP, or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. Direct temporary and permanent and indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would essentially be similar to Alternative 2 impacts (no known occurrences would be impacted). The undescribed sunflower is only known to occur within the Middle Canyon Spring within the River Corridor SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP, or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. Combined direct and indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. GSI (2008) concluded that based on an evaluation of current hydrogeologic conditions and modeled post-development conditions the future spring hydrology and water quality would not be substantially altered; however, for purposes of this analysis minor hydrologic changes (increase or decrease in groundwater supply to the spring) were considered as a potential impact. The loss of individual undescribed sunflower and the effects on its habitat due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

This species would not be subject to direct or indirect impacts by the proposed Project. Construction activities would not occur in habitat occupied by this species. The Project would

result in significant secondary impacts to individuals and suitable habitat outside the Project footprint.

The applicant will implement several mitigation measures to avoid, minimize, and mitigate secondary impacts to individuals and associated habitat. Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities, by providing erosion control plans, dust control, and an overall Project SWPPP; by providing guidelines for stream diversion; by preventing pollutants from entering flowing streams and storm flows; by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB, and by requiring temporary fencing and signage around the Middle Canyon Spring during all phases of construction adjacent to the spring. Long-term secondary impacts to the undescribed sunflower, such as the introduction of non-native, invasive plant species and increased human activity, trampling, and soil compaction, would be minimized to a level that is adverse but not significant by: providing revegetation plans for the River Corridor SMA; placing restrictions on plant palettes proposed for use on landscaped slopes; restricting access to, grazing within, and recreational usage of the River Corridor SMA; and providing for transition areas along the River Corridor SMA.

As described above, a number of factors may affect the long-term viability of the undescribed sunflower. In order to address both short-term and long-term secondary impacts to this species, the applicant will prepare a plan that identifies measures to maintain the undescribed sunflower species. The plan (outlined in BIO-77 below) will provide guidelines for collecting additional data on existing site conditions, developing a construction monitoring program and a post-development monitoring program, developing threshold parameters that activate consultation with CDFG and adaptive management measures for water quality and water quantity issues, excluding unauthorized entry into the spring, and contingency measures. BIO-77 identifies interim thresholds to trigger immediate consultation with CDFG, and any actions, if needed, to offset potential effect, should data indicate a deviation of more than 10% from the existing condition. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

Additionally, both short-term and long-term secondary impacts will be minimized through revegetation, restoration, and enhancement plans designed to provide for the long-term maintenance of the River Corridor SMA in a natural state and through the implementation of the plan.

All specific mitigation measures for the undescribed sunflower are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-169 SECONDARY IMPACTS – UNDESCRIBED SUNFLOWER

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to the undescribed sunflower.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-20, which states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

In order to avoid and minimize impacts due to hydrologic alterations and water quality impacts, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure 4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts due to the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7 and SP-4.6-19:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary.

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation, that native riparian plants be incorporated into landscaping where feasible, that roads and bridges be designed to discourage access to River Corridor SMA, that bank stabilization be composed of ungrouted rock, and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

In order to avoid and minimize impacts due to increased human activity, trampling, and the compaction of soils, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, and SP-4.6-24:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate secondary impacts to the undescribed sunflower.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45, BIO-52, and BIO-74:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements, conduct meetings with contractor describing the importance of restricting work to the restricted areas, discuss procedures for minimizing harm to or harassment of wildlife, review the construction area in the field with the contractor in accordance with the final grading plan, conduct a final field review of staking, be present during initial vegetation clearing and grading, and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable, within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope

runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution and with hydrologic alterations and water quality impacts would also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72:

BIO-72 specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize long-term secondary impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measures BIO-73 and BIO-74:

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

BIO-74 requires installation of temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to construction within 200 feet of the spring and, if applicable,

within 100 feet of flowing water in the Middle Canyon drainage. Permanent fencing and signage shall be erected along the bordering subdivision tract following construction. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

In order to address long-term secondary impacts to this species related to water quality and quantity, light from Commerce Center Drive bridge, and light and noise from vehicles, this EIS/EIR identifies Mitigation Measures BIO-77 and BIO-51:

BIO-77 describes preparation of a plan and measures to be implemented by the applicant to maintain the populations of the undescribed snail and sunflower species. The plan will provide guidelines for collecting data on existing site conditions, developing a construction monitoring program and a post-development monitoring program, developing threshold parameters that activate adaptive management measures for water quality and water quantity issues, excluding unauthorized entry into the spring, and contingency measures. The plan shall be subject to the approval of CDFG prior to disturbance within 100 feet of flowing water in the Middle Canyon drainage and/or 200 feet of Middle Canyon Spring.

BIO-51 will minimize impacts to natural areas and riparian resource, including the Middle Canyon Spring, from associated lighting and stormwater runoff associated with bridges (*i.e.*, Commerce Center Drive bridge) over the Santa Clara River. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bollard lights, or other available light and glare minimization methods. Bridges will be designed to minimize normal vehicular lighting from trespassing into natural areas using side walls a minimum of 24 inches high. All stormwater from the bridges will be directed to water treatment facilities for water quality treatment.

Secondary impacts would also be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA in a natural state. These measures include Mitigation Measures BIO-1 through BIO-16 and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of

success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to previously undescribed sunflower species would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

ISLAND MOUNTAIN-MAHOGANY (CNPS LIST 4.3/S3.3)

Life History

Island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*) is a shrub or small tree of the Rose family that is endemic to California's Ventura and Los Angeles counties, including the Channel Islands (except San Clemente Island) (CNPS 2007; Hickman 1993). It is found primarily on dry rocky slopes and washes at elevations between 30 and 600 meters AMSL (Dole and Rose 1996). It is an evergreen shrub or shrubby tree, typically found in chaparral and closed-cone coniferous forests. It is fire-adapted and resprouts readily from rootstocks the growing season following a fire (Twisselmann 1995).

Island mountain-mahogany is distinguished from the more common birch-leaf mountain-mahogany by its larger leaves with more lateral veins, more flowers per inflorescence, and generally shorter style on mature fruits (Hickman 1993). It is a large and conspicuous shrub and can be identified year-round from its leaf characteristics. It generally blooms between February and May and produces seed during late summer (CNPS 2007; Hickman 1993). The flowers are wind pollinated, and seeds are dispersed by wind and small mammals. Seeds dispersed by wind can travel up to 450 feet from the parent plant (Gucker 2006).

In addition to the direct loss of individuals, island mountain-mahogany is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the island mountain-mahogany. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Island mountain-mahogany was observed within the Entrada planning area in 2003, 2004, and 2005 (Dudek 2004E, 2004H, 2006G). Within the Specific Plan area, island mountain-mahogany was recorded annually from 2002 to 2006 (Dudek 2002A, 2004C, 2004F, 2006F, 2006I). Observations of this species were made within the Salt Creek area in 2003 (Dudek 2004I). This species has not been observed within the VCC planning area (Dudek 2002C, 2004B, 2004G, 2006H, 2006K, 2007H). Island mountain-mahogany was found primarily in chaparral at the base of north-facing slopes.

Because focused surveys were conducted in spring and summer (2001 through 2005), most occurred during and after the annual blooming period for island mountain-mahogany, which blooms from February to May (CNPS 2007). The surveys typically began in April and extended through August. This factor may have affected detection of this species. Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, consequently, the number of other documented special-status species observed; this could explain why island mountain-mahogany was recorded only within the Specific Plan area in 2006 and not at all in 2007. This species is a large shrub and was observed and identified during the blooming period and the non-blooming period.

Given the status of the species (CNPS List 4.3), the exact locations of individuals of this species within the Project area have not been mapped, but island mountain-mahogany is known to occur as an occasional component of chaparral vegetation communities within the Specific Plan and Entrada planning areas. Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals. A total of 2,286 acres of suitable habitat (chaparral vegetation communities) is present in the Project area (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct loss of 30 acres (1.3%) of suitable habitat for this species (within both the permanent and temporary footprints) out of 2,286 acres on site (**Figures 4.5-33-A1** through **4.5-33-D2**). No island mountain-mahogany individuals would be directly lost by implementation of the SCP. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the direct loss of island mountain-mahogany

occupying this habitat as a result of construction/grading activities would be considered a substantial adverse effect on this species and would constitute a substantial direct adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the loss of approximately 519 acres (22.7%) of suitable habitat within these areas (**Figure 4.5-33-A1** through **4.5-33-D2**). Individual island mountain-mahogany plants occurring within suitable habitat would be lost as a result of build-out of these planning areas. Because this species has not been observed within the VCC planning area, build-out of the VCC planning area is not anticipated to impact any island mountain-mahogany plants. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the potential loss of island mountain-mahogany individuals and the effect on suitable habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would not constitute a substantial adverse effect on this species (significance criterion 1). Indirect, permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would total 549 acres (24.0%). Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the combined direct and indirect permanent impacts to island mountain-mahogany individuals and suitable habitat would constitute a substantial adverse effect on this species (significance criterion 1). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas could occur to island mountain-mahogany. These include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known)**,** the potential loss of island mountain-mahogany individuals and the effect on suitable habitat resulting from these secondary impacts would constitute a

substantial adverse effect on this species (significance criterion 1). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for island mountain-mahogany (**Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 29 acres (1.3%) of permanent loss;
- Alternative 4 – 31 acres (1.4%) of permanent loss;
- Alternative 5 – 30 acres (1.3%) of permanent loss;
- Alternative 6 – 30 acres (1.3%) of permanent loss; and
- Alternative 7 – 34 acres (1.5%) of permanent loss.

Compared to Alternative 2, which would result in the direct loss of 30 acres, the direct loss of habitat under Alternatives 3 through 6 would not be substantially different. The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in greater impacts along the adjacent uplands under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the following indirect impacts to suitable habitat for island mountain-mahogany (**Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 506 acres (22.1%) of permanent loss;
- Alternative 4 – 496 acres (21.7%) of permanent loss;
- Alternative 5 – 498 acres (21.8%) of permanent loss;

- Alternative 6 – 490 acres (21.4%) of permanent loss; and
- Alternative 7 – 379 acres (16.6%) of permanent loss.

Compared to Alternative 2, which would result in 519 acres (22.7%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternative 7 would have the least impact because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to island mountain-mahogany suitable habitat.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of habitat on site. The indirect permanent loss of suitable habitat for island mountain-mahogany occurring as a result of build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would result in the following impacts to suitable habitat for island mountain-mahogany:

- Alternative 3 – 535 acres (23.4%) of permanent loss;
- Alternative 4 – 527 acres (23.1%) of permanent loss;
- Alternative 5 – 528 acres (23.1%) of permanent loss;
- Alternative 6 – 520 acres (22.7%) of permanent loss; and
- Alternative 7 – 413 acres (18.1%) of permanent loss.

Compared to Alternative 2, which would result in 549 acres (24.0%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 6 would not be substantially different compared with impacts associated with Alternative 2, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of additional pullbacks from the Santa Clara River (and its tributaries), and other Project footprint reductions that would occur under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable habitat for island mountain-mahogany occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of suitable habitat and the loss of island mountain-mahogany individuals due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to island mountain-mahogany: (1) loss of habitat, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Loss of habitat (and associated impacts to occasional individual island mountain-mahogany plants) could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of island mountain-mahogany habitat would range from 413 acres (18.1%) under Alternative 7 to 549 acres (24.0%) under Alternative 2. The combined permanent loss of this habitat would have a substantial adverse effect on this species. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. At least 1,486 acres of suitable habitat will be conserved in the High Country SMA and Salt Creek area where long-term preservation is provided. Mitigation measures for the preservation and management of the 4,205-acre High Country SMA would protect approximately 1,362 acres of suitable island mountain-mahogany habitat (Dudek 2007A) and would allow island mountain-mahogany to persist on site in perpetuity.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts, would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term secondary impacts to island mountain-mahogany, such as the introduction of non-

native, invasive plant species; hydrologic alterations and water quality impacts; increased human activity, trampling, and soil compaction; and increased risk of fire, would be minimized by restricting access to, grazing within, and recreational usage of the High Country SMA; providing for transition areas along the High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; and placing restrictions on plant palettes proposed for use on landscaped slopes.

All specific mitigation measures for island mountain-mahogany are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-170 LOSS OF HABITAT – ISLAND MOUNTAIN-MAHOGANY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, or mitigate the loss of habitat (chaparral vegetation communities) for island mountain-mahogany.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral vegetation communities occurs. Transition from the development edge to the natural area (where chaparral vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA, which supports 1,362 acres of chaparral vegetation communities.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two mitigation measures to reduce the loss of habitat (chaparral vegetation communities) for island mountain-mahogany.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support chaparral vegetation communities and island mountain-mahogany occurrences. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, impacts associated with the loss of habitat for island mountain-mahogany would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-171 SECONDARY IMPACTS – ISLAND MOUNTAIN-MAHOGANY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to island mountain-mahogany.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA, and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral vegetation communities occur. Transition from the development edge to the natural area (where chaparral vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral vegetation communities occur. Transition from the development edge to the natural area (where chaparral vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral vegetation communities occur. Transition from the development edge to the natural area (where chaparral vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from hydrologic and water quality–related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages (which are in proximity to chaparral vegetation communities), and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs (which contain chaparral vegetation communities) to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include SP-4.6-27, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, and SP-4.6-55 and SP-4.6-58:

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. This will benefit chaparral vegetation communities located in proximity to drainages.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading, this EIS/EIR identifies Mitigation Measure BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-52, BIO-70, and BIO-71:

BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial

vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution would be further mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-69, which requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, this EIS/EIR identifies Mitigation Measures BIO-49 and BIO-52:

BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows. This will benefit chaparral vegetation communities and any island mountain-mahogany located in proximity to drainages.

BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from increased fire frequency, this EIS/EIR identifies Mitigation Measure BIO-63, which requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include BIO-19 and BIO-69:

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support chaparral vegetation communities and island mountain-mahogany occurrences. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to island mountain-mahogany would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

LATE-FLOWERED MARIPOSA LILY (CNPS LIST 1B.2/S2.2)

Life History

Late-flowered mariposa lily (*Calochortus weedii* var. *vestus*) is known to occur in Monterey, Santa Barbara, San Luis Obispo, and Ventura counties at elevations between 275 and 900 meters AMSL. It has been documented from the nearby Santa Susana Mountains in Ventura County, located to the west of the Project area (CNPS 2007). This bulbiferous herb is typically found in dry, open chaparral and coastal woodland (Hickman 1993) but is sometimes found in riparian woodland on serpentine soils (CNPS 2007). Late-flowered mariposa lily blooms between June and August (CNPS 2007). It is identified by its flower color (pale cream, purplish, or red-brown, usually with a central blotch and dark hairs on inner surface); squarish petals with a fringe on the margin; and slightly depressed nectar gland hidden by surrounding hairs but without hairs on the gland surface itself.

No species-specific pollination or seed dispersal data are available for late-flowered mariposa lily. Seed dispersal for *Calochortus* is limited, with no obvious adaptations for wind or animal dispersal; fruits are capsular and borne close to the ground, with relatively heavy, passively dispersed seeds that lack fleshiness, sticktights, or (except in one species) wings (Patterson and Givnish 2003). Typically, *Calochortus* flowers are generalists in terms of their pollinators, although bees have been observed to be the primary pollinator in some *Calochortus* species, such as Lyall's mariposa lily (*C. lyallii*) (Dilley *et al.* 2000; Miller 2000).

Perennial bulbs, including late-flowered mariposa lily, may persist below ground without producing flowers or even leaves during years of poor rainfall or other environmental causes. For example, bulbs tend to flower in higher numbers following wildfire, which introduces large quantities of mineral nutrients (as ash) into the soil. Dormant plants (those producing no aboveground growth in a given year) cannot be located by field botanists, and those producing only leaves are unlikely to be found during surveys because the leaves are inconspicuous and visually similar to grass leaves. Thus, numbers of plants observed above ground fluctuates much more widely than numbers of living bulbs in the soil. The number of plants censused even in a "good" year is a minimum estimate of the number of living bulbs in the soil.

In addition to the direct loss of individuals, late-flowered mariposa lily is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the late-flowered mariposa lily.

Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Late-flowered mariposa lily was observed on steep ridges and slopes in chaparral in the High Country SMA in 2003 (Dudek and Associates 2004I) (**Figure 4.5-17**, High Country SMA and Salt Creek Area – Special-Status Species Occurrences).

All surveys were conducted during and after the blooming season for late-flowered mariposa lily, which occurs from June through August (CNPS 2007). As mentioned above in the Life History section, only a fraction of *Calochortus* plants flower in any given year, and the non-flowering individuals are generally not as visible. It is therefore not possible to estimate what portion was observed. In addition, surveys in the Project development area in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed. However, given the repeated surveys within the Specific Plan, VCC, and Entrada planning areas, it is assumed that the majority of late-flowered mariposa lily plants on site was observed.

Late-flowered mariposa lily occurrences were mapped utilizing aerial photography and topographic maps. Professional judgment and experience were used to delineate these polygons based on the detectability of the species, topography, and vegetation. This and other perennial special-status plants were mapped at a 10- to 20-meter (32.8- to 65.6-foot) scale due to their population dynamics (including seed dispersal and pollination range), observability, habit, habitat limitations, and mapping accuracy.

Because weather conditions—primarily rainfall—largely determine whether late-flowered mariposa lily blooms in a given year, these factors likely affected the detection of this species. There was a less-than-average amount of rainfall in the 2001-2002, 2003-2004, and 2005-2006 rain seasons (WRCC 2008), and, during the 2006-2007 rain season (October 2006–September 2007), the Piru 2 ESE weather station in Los Angeles County experienced its driest year in recorded history, with 4.1 inches of rain—less than one-quarter of the normal mean amount (17.40 inches) (WRCC 2008). While the amount of rainfall varied during the survey years, the 2002-2003 and 2004-2005 rain seasons were above average, and the cumulative survey results are representative of the distribution of this species on site.

Within the RMDP and SCP sites, late-flowered mariposa lily was found only in the High Country SMA. An estimated number of approximately 150 individuals occupying two locations was observed (Dudek and Associates 2004I). Because several years of mapped occurrence data are available for late-flowered mariposa lily, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

At least 150 late-flowered mariposa lily plants in two locations are known from the Project area occur within the High Country SMA portion of the RMDP and SCP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented late-flowered mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Direct impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as late-flowered mariposa lily has not been identified in the Project development area.

Indirect Permanent Impacts

Within the Specific Plan area, 150 late-flowered mariposa lily individuals were observed in the High Country SMA, outside of the Specific Plan area development footprint. This species was not observed within the VCC or Entrada planning areas. Therefore, build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the loss of known late-flowered mariposa lily plants (**Figure 4.5-146,** Alternative 2 Impacts to RMDP/SCP Special-Status Plants). Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented late-flowered mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be

disturbed by construction. Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species, and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as late-flowered mariposa lily has not been identified in the Project development area.

Combined Direct and Indirect Permanent Impacts

The 150 late-flowered mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly or indirectly lost as a result of implementing the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented late-flowered mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as late-flowered mariposa lily has not been identified in the Project development area.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and the build-out of the Specific Plan, VCC, and Entrada planning areas include hydrologic alterations and water quality impacts; accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; increased risk of fire; and increased human activity, trampling, and compaction of soils. Within the RMDP/SCP study area, late-flowered mariposa lily is located only in the High Country SMA, outside of the impact footprint for the RMDP/SCP and for the Specific Plan, VCC, and Entrada planning areas. The late-flowered mariposa lily occurrences are located several thousands of feet from the nearest residential development in the proposed Potrero Village and are not expected to experience secondary impacts from residential development. Both locations of late-flowered mariposa lily are located within 300 feet of the proposed trails in the High Country SMA, making these individuals susceptible to trampling or plant collecting by recreational visitors in the High Country SMA. However, because this species has an underground bulb, even if a plant were

trampled or a flower were picked, individuals would likely not be lost. Therefore, the potential loss of late-flowered mariposa lily and the effect on its habitat as a result of these secondary impacts would not constitute a substantial adverse effect on this species or cause a substantial reduction in the number or a reduction in the range of this species (significance criteria 1 and 7). Secondary impacts would be adverse, but not significant.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts and Indirect Permanent Impacts

The 150 late-flowered mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas (**Figures 4.5-147** through **4.5-151**, Alternatives 3 through 7 Impacts to RMDP/SCP Special-Status Plants). The potential for impacts to individual late-flowered mariposa lily plants as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would essentially be the same as for Alternative 2. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented late-flowered mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented late-flowered mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Direct and indirect impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as late-flowered mariposa lily has not been identified in the Project development area.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be similar to Alternative 2. The 150 late-flowered mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP, or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented late-flowered mariposa lily occurrences, consisting of

relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented late-flowered mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Combined direct and indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has essentially the same short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The impacts to individual late-flowered mariposa lily and the effect on its habitat due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be adverse, but not significant.

Mitigation Strategy and Summary

This species would not be subject to significant direct, indirect, or secondary impacts by the proposed Project. Construction activities would not occur in habitat occupied by this species. Although no mitigation is required, late-flowered mariposa lily will benefit from previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required. In addition, the 150 known late-flowered mariposa lily plants would be conserved in the High Country SMA.

MAINLAND CHERRY (LOCALLY REGULATED)

Life History

Mainland cherry (*Prunus ilicifolia* ssp. *ilicifolia*) is a sclerophyllous, broad-leaved shrub or shrubby tree found throughout the central and southern Coast Ranges and from Napa County southward to Baja California (Hickman 1993; McMurray 1990). It is a shrub of the Rose family. In southern California, it is a component of mesic chaparral below 1,600 meters (5,905 feet) AMSL within foothill woodland, chaparral, and coastal scrub communities (McMurray 1990; Dole and Rose 1996). In mature chaparral communities, holly-leafed cherry will occur as a dominant woody species in relatively moist, cool sites, such as eroded channels, arroyos, depressions, washes, and the toes and shoulders of slopes (McMurray 1990; Dole and Rose 1996). The species is able to establish as a widespread component of fire-prone environments because of vigorous resprouting. Population expansion and seedling establishment primarily occur during extended fire-free periods because seedlings can develop in gaps created by the death of shorter-lived species (McMurray 1990).

Mainland cherry blooms between March and May (CalFlora 2008), but it is a conspicuous shrub and it can be recognized year-round by its leaf characteristics. This species is pollinated by insects, including bees (Plants for a Future 2007; California Gardens 2007). The fruit is eaten, and presumed dispersed, by birds and mammals, including bear and coyote (California Gardens 2007).

In addition to the direct loss of individuals, mainland cherry is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the mainland cherry. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Within the Specific Plan area, mainland cherry was recorded in 2001, 2002, 2003, 2004, 2005, and 2006 within undifferentiated chaparral, big sagebrush scrub, and river wash (Dudek and Associates 2002A, 2004C, 2004F, 2006F, 2006I; FL*x* 2002A). Observations of this species were made within the VCC planning area in 2003, 2004, 2005, and 2006 within undifferentiated chaparral, big sagebrush scrub, and river wash (Dudek and Associates 2004B, 2004G, 2006H, 2006K). Mainland cherry was observed within the Entrada planning area as an occasional

component of undifferentiated chaparral, big sagebrush scrub, and river wash in 2003, 2004, 2005, 2006, and 2007 (Dudek and Associates 2004E, 2004H, 2006G, 2006J; Dudek 2007F).

Focused surveys for special-status plant species were conducted in spring and summer 2001 through 2007, coincident with the annual blooming period for mainland cherry, which blooms from March through May (CalFlora 2008). The surveys typically began in April and extended through August. Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed. This species is a large, conspicuous tree or shrub and was observed and identified during the blooming period and the non-blooming period.

This species was observed within the RMDP and SCP area in 2001, 2002, 2003, 2004, 2005, 2006, and 2007. Given the low sensitivity status of the species, the exact locations of individual mainland cherry shrubs were not mapped. Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals. A total of 424 acres of suitable habitat for mainland cherry (undifferentiated chaparral, big sagebrush scrub, and river wash) is present in the Project area (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct loss of 88 acres (20.8%) of suitable habitat for this species (within both the permanent and temporary footprints) out of 424 acres on site (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). No suitable habitat would be directly lost by implementation of the SCP.

The loss of mainland cherry suitable habitat as a result of implementation of the RMDP would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles and would, therefore, be a significant impact (significance criterion 1). Direct impacts to mainland cherry (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the permanent loss of 81 acres (19.1%) of suitable habitat for mainland cherry within these areas (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). Individual mainland cherry plants occurring within suitable habitat would be lost as a result of build-out of these planning areas. The potential loss of mainland cherry individuals and the effect on suitable habitat as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles and would, therefore, be a significant impact (significance criterion 1). Indirect permanent impacts to mainland cherry (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of mainland cherry suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 169 acres (39.9%). The combined direct and indirect permanent impacts to suitable habitat would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles and would, therefore, be a significant impact (significance criterion 1). The combined direct and indirect permanent impacts to mainland cherry (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. The potential loss of mainland cherry and the effect on its habitat as a result of these secondary impacts would constitute a substantial adverse effect to this species (significance criterion 1). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for mainland cherry (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities):

- Alternative 3 – 89 acres (21.0%) of permanent loss ;
- Alternative 4 – 83 acres (19.6%) of permanent loss ;
- Alternative 5 – 91 acres (21.5%) of permanent loss ;
- Alternative 6 – 78 acres (18.4%) of permanent loss ; and
- Alternative 7 – 62 acres (14.7%) of permanent loss.

Compared to Alternative 2, which would result in the direct loss of 88 acres (20.8%) of mainland cherry suitable habitat, the permanent and temporary loss of habitat under Alternatives 3 through 6 would not be substantially different. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries, which would result in fewer permanent impacts and relatively more temporary impacts to mainland cherry suitable habitat under Alternative 7.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is generally similar to the loss under Alternative 2, these impacts would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to suitable habitat for mainland cherry (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communitie**s**):

- Alternative 3 – 63 acres (14.8%) of permanent loss;
- Alternative 4 – 48 acres (11.3%) of permanent loss;
- Alternative 5 – 48 acres (11.3%) of permanent loss;
- Alternative 6 – 24 acres (5.7%) of permanent loss; and
- Alternative 7 – 15 acres (3.5%) of permanent loss.

Compared to Alternative 2, which would result in 81 acres (19.1%) of indirect permanent loss of mainland cherry suitable habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4, 5, and 6 would impact relatively fewer acres than Alternative 3 because VCC would not be constructed under those alternatives. Alternative 7 would have the least impact because VCC would not be constructed and there would be additional pullbacks from the Santa Clara River and its tributaries, as well as other changes in the Project footprint that would reduce impacts to mainland cherry suitable habitat.

Although Alternatives 3 through 7 would all have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of habitat on site. The indirect permanent loss of suitable habitat for mainland cherry occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for mainland cherry:

- Alternative 3 – 152 acres (35.8%) of permanent loss;
- Alternative 4 – 131 acres (30.9%) of permanent loss;
- Alternative 5 – 139 acres (32.8%) of permanent loss;
- Alternative 6 – 102 acres (24.1%) of permanent loss; and
- Alternative 7 – 77 acres (18.2%) of permanent loss.

Compared to Alternative 2, which would result in 169 acres (32.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts; as described above, impacts would be reduced because VCC would not be constructed under Alternatives 4 through 7, and additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions would occur under Alternative 7. Although Alternatives 3 through 7 would all have reduced impacts compared to Alternative 2, these impacts would still be adverse because of the loss of habitat on site. The combined direct and indirect permanent loss of suitable habitat for mainland cherry occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2, because each alternative has similar short-term construction activities and long-term effects due to factors such as increased runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of suitable habitat and the loss of mainland cherry individuals due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to mainland cherry: (1) loss of suitable habitat, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to habitat and associated individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of suitable habitat for the mainland cherry resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 77 acres (18.2%) under Alternative 7 to 169 acres (32.9%) under Alternative 2. The combined permanent loss of suitable habitat and associated individuals would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to habitat and associated individuals. Pre-construction surveys for mainland cherry will be conducted, and mainland cherry trees and shrubs will be replaced in conformance with the oak tree ordinance (*e.g.*, County of Los Angeles 1988) in effect at that time, and mainland cherry trees or shrubs outside riparian areas greater than one inch diameter at breast height (dbh) shall be replaced at a ratio of at least 2:1. The proposed mitigation, through guidelines supplied by the Oak Resources Management Plan and through the preservation and long-term management of the High Country SMA, River Corridor SMA, Salt Creek area, and Open Area, provides mitigation for the loss of tree resources in a manner that emphasizes: (1) restoring the natural regeneration capabilities of preserved woodlands in order to restore and improve forest diversity and value on a long-term basis and (2) creating new woodlands in areas that supported mainland cherry prior to development and in areas that will enhance wildlife movement and habitat functions. General procedures to avoid and minimize impacts to mainland cherry habitat and associated individuals during construction

will be implemented, and a qualified biologist will be present during construction in order to avoid inadvertent impacts to biological resources outside of the grading area, further reducing impacts to the species.

With respect to short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts, they will be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term, residual secondary impacts to the mainland cherry, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction, would be minimized by restricting access to, grazing within, and recreational usage of the River Corridor SMA and High Country SMA; providing for transition areas along the River Corridor SMA and High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; placing restrictions on plant palettes proposed for use on landscaped slopes; and providing revegetation plans for the River Corridor SMA.

All specific mitigation measures for mainland cherry are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-172 LOSS OF HABITAT – MAINLAND CHERRY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, and/or mitigate the loss of habitat.

To mitigate for the loss of mainland cherry habitat during construction, SP-4.6-61 states that if the County determines that there may be mainland cherry on the property, a site-specific survey shall be conducted to determine its presence or absence, and any necessary mitigation measures shall be implemented. In the event that mainland cherry individuals are found during the survey, they will be replaced according to SP-4.6-48. SP-4.6-48 lists standards for the restoration and enhancement of oak resources, and applies these standards to mainland cherry, within the High Country SMA and Open Area, including: replacement trees shall be planted in conformance with

the current oak tree ordinance, trees planted shall be of local genetic stock, a resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

In addition to mitigation measures requiring site-specific surveys and replacement of individual trees, mainland cherry is associated with several jurisdictional tributaries to the Santa Clara River, and, where this species occurs in jurisdictional areas, the following mitigation measures will apply.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, and corrective measures) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester. SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub. SP-4.6-44 requires drainages with flows over 2,000 cfs in the Open Area to have soft bottoms. Bank protection will be ungrouted rock or buried bank stabilization except where other stabilization is required for public safety. SP-4.6-45 requires establishment of the alignments and widths of major drainages in the Open Area through drainage studies to be approved by the County at the time of subdivision map approval.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In addition to the restoration and avoidance mitigation measures described above, mainland cherry will benefit from the following preservation and management mitigation measures. SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to reduce the loss of habitat for mainland cherry.

In addition to mitigation measures described above requiring site-specific surveys and replacement of individual trees, mainland cherry is associated with several jurisdictional tributaries to the Santa Clara River, and, where this species occurs in jurisdictional areas, the following mitigation measures will apply.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A), and areas identified as being suitable for oak resources (including mainland cherry) enhancement and creation shall be used for mitigation.

BIO-88 states that any southern California black walnut or mainland cherry trees or shrubs outside riparian areas greater than one inch dbh shall be replaced at a ratio of at least 2:1, using a minimum 15-gallon size specimen that measures at least one inch in diameter one foot above the base.

In addition to the restoration and avoidance mitigation measures described above, mainland cherry will benefit from the following preservation and management mitigation measures.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, impacts associated with the loss of habitat for mainland cherry would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-173 SECONDARY IMPACTS – MAINLAND CHERRY

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to mainland cherry.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-20, SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA

and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from hydrologic and water quality–related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages, and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-7, SP-4.6-19, SP-4.6-26a, SP-4.6-33, and SP-4.6-43:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation, that native riparian plants be incorporated into landscaping where feasible, that roads and bridges be designed to discourage access to River Corridor SMA, that bank stabilization be composed of ungrouted rock, and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-24, SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor, off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain planning areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to day time use. No hunting, fishing, motor or

off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-26a, SP-4.6-27, SP-4.6-28, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, SP-4.6-43, SP-4.6-46 and SP-4.6-47, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, and corrective measures) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area.

Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA. SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust; as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45 and BIO-52:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction, as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution and with hydrologic alterations and water quality impacts would also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measures BIO-69 and BIO-73:

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Each potential secondary impact would also be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include BIO-1 through BIO-16, BIO-62, BIO-69, and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-

lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to mainland cherry would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

OAK TREES (LOCALLY REGULATED)

Life History

Five oak species or hybrid forms occur on the Newhall Ranch Project site. Four of them are tree species and one is a shrub. None of these oak species is rare or has special conservation status with the CDFG (2009) or CNPS (2009). Oaks, however, are recognized for aesthetic, historic, and habitat values (Starrs 2002), and oak trees or oak woodlands are protected by a variety of statutes and policies in California, including the County of Los Angeles Oak Tree Ordinance (CLAOTO).

Oak forests and woodlands provide food, cover, and nesting or denning habitat for many animal species (Block 1990; Pavlik *et al.* 1991). Oaks are the most evident plants, but the forests and woodlands are made up of diverse assemblages of understory shrubs, vines, herbs, grasses, and parasites (*e.g.*, mistletoe). Standing dead trees and fallen logs provide essential habitat elements. Acorns, fruits of other species, leaves, insects, seeds, mushrooms, and other fungi all provide food for wildlife. Oak woodlands and forests provide thermal cover for large mammals, including deer, and escape cover for many other animals. Oak canopies and foliage provide perching, roosting, and nesting sites for many bird species. Cavities in the limbs or trunks of oak trees are used as nesting and denning sites by birds and mammals. Dead oak trees provide nest sites for woodpeckers (which build nesting cavities) and "secondary cavity nesters," which use old woodpecker nests. Woodpeckers and many secondary cavity nesters feed largely on insects, perhaps preventing large-scale insect outbreaks from killing off forest stands. Barrett (1980) lists at least 20 mammal species of this region that use oaks for food, cover, or both. Verner (1980) identified 110 birds that use oak habitats in California during breeding season.

Oaks are wind pollinated and do not form showy flowers. Their male flowers are minute, arranged in conspicuous pendulous catkins, often releasing copious pollen in spring. The female flowers are also minute and initially are inconspicuous in leaf axils. They become conspicuous after pollination, as the acorns develop. Acorn maturation may take one or two years, depending on species (Hickman 1993). Many oaks have a tendency to produce "mast" fruit (*i.e.*, produce copious acorn crops in some years, and very few acorns in others).

Coast Live Oak (*Quercus agrifolia*)

Coast live oaks are endemic to California and northern Mexico and occur along the Coast, Transverse, and Peninsular ranges in California, and the Sierra de Juarez and Sierra San Pedro Martir ranges in Mexico, from southern Mendocino County, California, south to Canada El Piquillo, Baja California (Minnich 1987; Pavlik *et al.* 1991; Steinberg and Howard 1992). They are found on many soil types in valleys and woodlands, and in mixed-evergreen forests below about 1,500 meters elevation (Hickman 1993).

Coast live oaks are evergreens, growing to about 25 meters tall, and have widely ridged, furrowed, checkered dark gray trunk bark. The leaf blades are variable in size, shape, and margin patterns, usually oblong to round with a rounded to spine-toothed tip. Leaf margins are sometimes weakly spine-toothed. The upper leaf surface is dull green and usually strongly convex (Dole and Rose 1996). On the undersides, the leaves are irregularly veined, with tufts of brownish hairs where lateral veins join the midvein (Steinberg and Howard 1992); this character is generally diagnostic for coast live oak. Male and female inflorescences generally appear in early spring, while new leaves are immature. The acorn matures in one year (Dole and Rose 1996; Hickman 1993). The cup is obconic with thin scales. The nut is ovoid with a pointed tip (Hickman 1993). Coast live oaks are slow-growing long-lived (125 to 250 years) trees, and do not mature until about age 60 to 80 years (Griffin 1977).

Scrub Oak (*Quercus berberidifolia*)

Scrub oaks are found through the outer Coast, Transverse, and Peninsular ranges, from Tehama County to northern Baja California (Pavlik *et al.* 1991), and are common throughout much of their range. They are generally found in well-drained soils, in chaparral or with other oak species in mixed woodlands (Allen-Diaz *et al.* 2007; Keeley and Davis 2007), on dry slopes between about 300 and 1,500 meters AMSL (Hickman 1993). Scrub oaks are evergreen, growing to about three meters tall, and have smooth to chunky grayish bark. The leaf blades are variable in size and shape. The upper surfaces are generally flat or somewhat convex or wavy, and dull olive green. The lower surfaces are pale, dull gray- or yellow-green, covered by minute closely appressed hairs (not visible without magnification) (Hickman 1993). The flowers generally appear in early spring while new leaves are immature. The acorns mature in one year (Dole and Rose 1996; Hickman1993). The acorn cup is hemispheric with tubercled scales; the nut is ovoid with an obtuse to acute tip (Hickman 1993).

Valley Oak (*Quercus lobata*)

Valley oaks are endemic to California and occur from Shasta County south through the Central Valley and lower-elevation foothills and valleys of the Sierra Nevada and Coast Ranges to Los Angeles County (Pavlik *et al*. 1991; Howard 1992). They are found primarily in bottomland soils on slopes, valleys, and savannahs below about 1,700 meters AMSL (Hickman 1993), usually on silty loam, clay loam, and sandy clay loam soils typical of floodplains and valley floors.

Valley oaks are characteristic, stately-looking deciduous trees growing up to about 35 meters tall. They have deeply checkered, light grayish bark. The leaves are broad and lobed. The upper leaf surface is dull green with minute hairs. Catkins emerge from March to April and produce acorns during the fall (Howard 1992). The acorns mature in one year (Dole and Rose 1996; Hickman 1993). The acorn cups are hemispheric with tubercled scales; the nuts are long-conic with tapered to pointed tips (Hickman 1993).

Valley oaks are long-lived trees, but many stands are apparently not regenerating at high enough rates to replace natural mortality, especially on dry sites and on grazing lands (Griggs 1990; Allen-Diaz *et al.* 2007). The lack of regeneration is due to poor seedling establishment, largely due to wholesale changes in woodland understory ecology, from native shrubs and herbs to non-native grasses and forbs (Pavlik *et al.* 1991).

Alvord Oak (*Quercus* x *alvordiana*)

Alvord oak is an oak species of hybrid origin, involving blue oak (*Q. douglasii*) and Tucker's oak (*Q. john-tuckeri*) (Nixon and Muller 1997). Alvord oak is a semi-deciduous shrub to small tree, usually less than about 10 feet tall. Its distribution is mainly the interior Coast Ranges and Tehachapi Mountains (Hickman 1993) and Liebre Mountains (Boyd 1999). The Project site is evidently at or near its southernmost distribution. It is recognized by its semi-deciduous life history, leaf shape, and fine structure of the minute leaf hairs (Roberts 1995). This Fagaceae species is found on dry slopes and hills between 400 and 1,300 meters AMSL. Catkins emerge in spring and produce acorns during the fall that mature in one year (Pavlik *et al.* 1991; Hickman 1993). Alvord oak specimens collected at the Project site were identified by John Tucker of the U.C. Davis Tucker Herbarium.

Interior Live Oak (*Quercus wislizeni*)

Interior live oaks are endemic to California and northern Mexico, from Siskiyou and Shasta counties south along the foothills of the Sierra Nevada and inner Coast Ranges into northern Baja California (Tirmenstein 1989). They are found on a variety of soils including well-drained, fine-grained to cobbly or gravelly sandy loams, or skeletal soils, in interior canyons, slopes, valleys, chaparral, and mixed evergreen forests and woodlands below about 2,000 meters AMSL (Hickman 1993; White and Sawyer 1994).

Where they occur on valley floors, interior live oaks may grow to about 22 meters tall but often occur as smaller trees or shrubs in chaparral and dense forest stands. They have checkered, furrowed, grayish bark. They are evergreens. The leaf blades are strongly variable in size, shape, and margin patterns. Their upper surfaces are smooth and shiny, dark green, and the lower surfaces are slightly yellow-green and also smooth and shiny (Tirmenstein 1989). This characteristic distinguishes interior live oak from other evergreen oaks, including the shrubby species, throughout the region.

Flowers and fruit begin production from March to May. The acorns mature in two years (Dole and Rose 1996; Hickman 1993). The hemispheric cup has thin scales, while the nut is cylindrical-ovoid to obconic (Hickman 1993).

The primary threats to individual oak trees on construction sites are typically the result of physical injuries or changes caused by machinery involved with the development process.

Potential impacts to oak trees include root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Other threat factors associated with urban development include human-caused alterations and hydrologic changes. Potential impacts due to the increase in human presence include firewood harvesting, hiking/recreational use, green waste/debris deposition, and increased susceptibility to diseases. These activities cause denuded growing environments from soil compaction, seedling trampling, exotic species introduction, littering, vandalism, and deliberate or accidental wildfire ignition. Changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff) can also threaten oak trees. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native, invasive plants, which can increase fire frequency, extent, and intensity. Altered hydrology also can change the soil environment by enabling soil pathogens to thrive in warm seasons when soil is normally dry (Swiecki 1990; Swiecki and Bernhardt 1996).

Diseases include oak mistletoe (*Phoradendron villosum*), hedgehog fungus (*Hericium erinaceus*), and sunscald (Swiecki and Bernhardt 1996). Additionally, a variety of oak diseases and blights are associated with modified water regimes, especially from irrigation: oak anthracnose (*Apiognomonia errabunda* and *Cryptocline cinerescens*), white rot of sapwood caused by *Hypoxylon thouarsianum*, basidiocarps (*Lactiporus gilbertsonii*), phytophthora root rot (*Phytophthora spp.*), and oak root fungus (*Armillaria mellea*) (Swiecki and Bernhardt 1996). In northern California, several oak species have suffered high mortality caused by a pathogenic fungus, termed "sudden oak death" (*Phytophthora ramorum*) (Swain 2002), but risk of its spreading to southern California is apparently low (Sonoma State University Geographic Information Center 2004).

Altered fire regime due to increased human use may affect oak ecology in a variety of ways; perhaps increasing weed abundance (Pavlik *et al.* 1991) or perhaps facilitating seedling establishment (Allen-Diaz *et al.* 2007). Mature oak trees are very long-lived, even after repeated burning. Most species (excluding coast live oak) are top-killed by even low-intensity fires (Plumb 1980). Following fire, they resprout from basal burls. This pattern is comparable to the "postfire obligate resprouter" life history Keeley and Davis (2007) described for numerous chaparral shrubs. Among these species, fire mortality is low, but repeated over-frequent wildfires would eventually exhaust stored carbohydrates and kill well-established burls.

Survey Results

Oak tree surveys have been conducted within the portions of the study area (including a 200-foot buffer) where development would occur, while the number of oak trees to be preserved within protected areas (*e.g.*, High Country and River Corridor SMAs, and the Salt Creek area) has been estimated (Impact Sciences 2006B, 2006C, 2006D; Land Design Consultants 2007; Dudek 2007D). Trees within the development portion of the Specific Plan, VCC, and Entrada planning areas were mapped using a global positioning system (GPS). Tree stands (tree groupings)

outside of these areas, in undisturbed or preserved areas, were delineated on aerial images and evaluated in the field *via* a sampling protocol and later statistically analyzed for population estimates.

In summary, trees with minimum trunk diameters (eight inches for single trunks or a combined 12 inches for two stems on a multi-stemmed tree) were inventoried. Additionally, trees with trunks of five inches or larger diameter were recorded from specific areas in consideration of the Oak Woodlands Conservation Act (Pub. Resources Code, § 21083.4), the state law applicable to County oak woodland impact analysis (for counties without an oak ordinance in substantial conformance with the state law). Based on the tree inventory data available to Dudek, the number of trees in the five- to seven-inch range is not substantial within the Newhall Land property.

In total, 3,766 trees were inventoried and assessed within the GPS inventory areas (**Table 4.5-61**, Species Distribution for Oak Trees within the GPS Inventory Areas (Heritage Oaks)). The majority of the trees throughout the GPS inventory areas are native coast live oak trees. Present at lower, but substantial, levels are valley oak trees. The trees are scattered throughout the property but consistent with the species' preferences: the coast live oaks are primarily associated with drainage bottoms, north-facing slopes, and along secondary drainages on non-north-facing slopes; the valley oaks are strongly associated with open grassland areas on gentler slopes and valley bottoms.

Table 4.5-61
Species Distribution for Oak Trees within the GPS Inventory Areas (Heritage Oaks)

	Proposed Project Areas						
Species	**Entrada Planning Area**	**Valencia Commerce Center**	**Homestead Village**	**Landmark Village**	**Potrero Village**	**Mission Village**	**Total**
coast live oak	0	0	1,789	3	997	501	3,290
valley oak	59	29	4	0	248	75	415
Alvord oak	0	3	2	0	0	0	5
scrub oak	10	0	28	0	0	18	56
Total	**69 (8)**	**32 (1)**	**1,823 (156)**	**3 (2)**	**1,245 (159)**	**594 (51)**	**3,766 (377)**

Preserved trees outside the GPS inventory areas in the large dedicated open space areas of the River Corridor SMA, High Country SMA, and Salt Creek area were estimated with sampling and regression analysis. Henrickson estimated 156 oak trees are present in the River Corridor SMA (County of Los Angeles 1999). Preserved tree populations within the High Country SMA and Salt Creek area were estimated in 2007. The estimated number of oak trees in the High Country SMA is 13,732 and in the Salt Creek area is 5,640, occurring primarily on north-facing slopes and in ravines and drainage bottoms (Dudek 2007D).

Together, the surveys of the inventory areas and the estimates of preserved trees outside these areas identified 23,294 oak trees potentially regulated by CLAOTO (County of Los Angeles 1988) and California Public Resources Code section 21083. The vast majority of the oaks on site are coast live oak (*Quercus agrifolia;* 16,626), but valley oak (*Q. lobata*; 3,302), scrub oak (*Q. berberidifolia*; 56*)*, interior live oak (*Q. wislizeni*; 1), and Alvord oak (*Q.* × *alvordiana*; 5) also occur. The 156 trees estimated to be in the River Corridor SMA were not identified to the species level. The remaining 3,148 trees are classified as mixed oaks. Impacts to, and mitigation for, oak woodland and oak/grass vegetation communities are discussed in detail in **Subsection 4.5.5.2.3.2**, Impacts to Vegetation Communities and Land Covers. Because the oak species were mapped so extensively on site, impacts to these species were evaluated by impacts to individuals rather than by loss of habitat.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

Loss of individual oak trees on construction sites is typically the result of physical injuries or changes caused by machinery involved with the development process. In addition to the removal of individual trees, potential impacts to oak trees include root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others.

Of the approximately 23,294 regulated oak trees within the RMDP and SCP site, it is estimated that approximately 220 trees (0.9%), including 32 heritage oaks as defined by CLAOTO, would be lost or damaged (within both the permanent and temporary footprints) to allow for construction of RMDP facilities (**Figure 4.5-152**, Alternative 2 Impacts to RMDP/SCP Oak Trees). This represents a loss of habitat elements (*e.g.*, acorn production, nesting sites, shade cover) for a variety of wildlife species. The majority of the regulated oak trees that would be lost or damaged by implementation of the RMDP

and SCP occur within CDFG and/or Corps jurisdictional riparian areas. No individuals would be directly lost by implementation of the SCP.

This loss would constitute a substantial direct adverse effect on these oak species and would be a substantial reduction in the number or range of these oak species (significance criteria 1 and 7). This loss would also conflict with CLAOTO, and would constitute a significant impact on regulated trees (significance criterion 5). Direct permanent and temporary impacts are significant, absent mitigation.

Indirect Permanent Impacts

The remedial grading required for build-out of the Specific Plan area would result in impacts to 1,087 of the 17,397 protected oak trees, including 181 heritage oaks, representing 6.3% of the total population of ordinance and heritage oaks within the Specific Plan area. Build-out of the VCC planning area would result in the loss of 31 ordinance oak trees, none of which are heritage oaks, representing 96.9% of the ordinance and heritage oaks within that planning area. Build-out of the Entrada planning area would result in the loss of 32 oak trees, none of which are heritage oaks, representing 46.4% of the total population of ordinance and heritage oaks within that planning area (**Figure 4.5-152**, Alternative 2 Impacts to RMDP/SCP Oak Trees). This represents a loss of habitat elements (*e.g.*, acorn production, nesting sites, shade cover) for a variety of wildlife species. In addition to the removal of individual trees, potential impacts to oak trees include root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. The loss of these trees would constitute a substantial adverse effect on these oak species and would substantially reduce the number or restrict the range of these oak species (significance criteria 1 and 7). This loss would also conflict with CLAOTO and would constitute a significant impact on regulated trees (significance criterion 5). Indirect permanent impacts would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of individual oak trees resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 1,370 (5.9%) trees, including 213 heritage oak trees. This represents a loss of habitat elements (*e.g.*, acorn production, nesting sites, shade cover) for a variety of wildlife species. In addition to the removal of individual trees, potential impacts to oak trees include root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. The combined direct and indirect impacts to oak trees would have a substantial adverse effect on these oak species and would substantially reduce the number or restrict the range of these oak species (significance criteria 1 and 7). This loss would also conflict with CLAOTO and would

constitute a significant impact on regulated trees (significance criterion 5). The combined direct and indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and the build-out of the Specific Plan, VCC, and Entrada planning areas include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; increased human activity that may result in littering, vandalism, and increased susceptibility to diseases, and trampling and soil compaction, and an increased risk of fire. Because of the widespread presence of these oak species on site in proximity to proposed development areas, short-term and long-term secondary impacts are expected to occur to these oak species. The impacts to oak trees as a result of these secondary impacts would constitute a substantial direct adverse effect on these oak species and could substantially reduce the number or restrict the range of these oak species (significance criteria 1 and 7). This potential loss would also conflict with CLAOTO and would constitute a significant impact on regulated trees (significance criterion 5). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to individual oak trees (**Figures 4.5-153** through **4.5-157,** Alternatives 3 through 7 Impacts to RMDP/SCP Oak Trees)**:**

- Alternative 3 – permanent loss of 226 (1.0%) oak trees, including 32 heritage oak trees;
- Alternative 4 – permanent loss of 219 (0.9%) oak trees, including 32 heritage oak trees;
- Alternative 5 – permanent loss of 338 (1.5%) oak trees, including 39 heritage oak trees;
- Alternative 6 – permanent loss of 271 (1.2%) oak trees, including 65 heritage oak trees; and
- Alternative 7 – permanent loss of 304 (1.3%) oak trees, including 82 heritage oak trees.

Compared to Alternative 2, which would result in the direct permanent loss of 220 (0.9%) oak trees, including 32 heritage oak trees, the permanent loss of oak trees under Alternatives 3 through 7 would not be substantially different due to changes in the Project footprint. The majority of the regulated oak trees that would be lost or damaged by implementation of the RMDP and SCP occur within CDFG and/or Corps jurisdictional riparian areas.

Because the direct permanent loss (Impacts to Individuals) of oak trees occurring as a result of implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall loss of individuals under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect impacts to individual oak trees (**Figures 4.5-153** through **4.5-157,** Alternatives 3 through 7 Impacts to RMDP/SCP Oak Trees):

- Alternative 3 – permanent loss of 914 (3.9%) oak trees, including 164 heritage oak trees;
- Alternative 4 – permanent loss of 860 (3.7%) oak trees, including 162 heritage oak trees;
- Alternative 5 – permanent loss of 880 (3.8%) oak trees, including 159 heritage oak trees;
- Alternative 6 – permanent loss of 579 (2.5%) oak trees, including 96 heritage oak trees; and
- Alternative 7 – permanent loss of 541 (2.3%) oak trees, including 74 heritage oak trees.

Compared to Alternative 2, which would result in the permanent loss of 1,150 (4.9%) individual oak trees, including 181 heritage oak trees, Alternatives 3 through 7 would impact fewer oak trees. Reduced impacts would occur because there would be additional pullbacks from the Santa Clara River and its tributaries, and other changes in the Project footprint that would reduce impacts to oak trees. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7.

Because the indirect permanent loss (Impacts to Individuals) of oak trees occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 is not substantially different than loss of individuals

under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to individual oak trees:

- Alternative 3 – permanent loss of 1,140 (4.9%) oak trees, including 196 heritage trees;
- Alternative 4 – permanent loss of 1,079 (4.6%) oak trees, including 194 heritage trees;
- Alternative 5 – permanent loss of 1,218 (5.2%) oak trees, including 198 heritage trees;
- Alternative 6 – permanent loss of 850 (3.6%) oak trees, including 161 heritage trees; and
- Alternative 7 – permanent loss of 845 (3.6%) oak trees, including 156 heritage trees.

Compared to Alternative 2, which would result in the permanent loss of 1,370 (5.9%) oak trees, including 213 heritage oak trees, Alternatives 3 through 7 would result in reduced impacts, as described above for the discussions of direct and indirect permanent impacts. The reduced impacts would be due to successively greater pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions that would reduce impacts to oak trees. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7. The combined direct and indirect permanent loss of individual oak trees occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity,

trampling, and soil compaction. Because of the widespread presence of these oak species on site in proximity to proposed development areas, short-term and long-term secondary impacts are expected to occur to these oak species. Impacts to individual oak trees due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to oak trees: (1) impacts to individuals, and (2) secondary impacts to individuals outside the Project footprint.

Impacts to individual oak trees could occur as a result of physical injuries or changes caused by machinery involved with the development process. In addition to the removal of individual trees, potential impacts to oak trees include root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. The combined permanent loss of individual oak trees resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 845 trees (3.6%), including 156 heritage oak trees, under Alternative 7 to 1,370 trees (5.9%), including 213 heritage oak trees, under Alternative 2. The combined permanent loss of individuals would constitute a substantial adverse effect on these oak species and would substantially reduce the number or restrict the range of these oak species. This loss would also conflict with CLAOTO and would constitute a significant impact on regulated trees. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals and associated habitat. General procedures to avoid and minimize impacts to oak trees during construction will be implemented and a qualified biologist will be present during construction in order to avoid inadvertent impacts to biological resources outside of the grading area, further reducing impacts to the species.

The proposed mitigation encompasses a three-part strategy that incorporates (1) planting replacement trees, per the requirements of CLAOTO and previously incorporated Mitigation Measure SP-4.6-48; (2) additional replacement ratios recommended in this EIS/EIR for impacts to oak trees and oak woodlands where they occur within stream channels falling under CDFG and Corps jurisdiction, per sections 1600 and 404 (BIO-2); and (3) additional measures recommended in this EIS/EIR for tree replacement or woodland restoration/enhancement to mitigate for oak trees and woodland occurring in uplands, outside CDFG and Corps jurisdiction (BIO-22).

The Project's impacts to oak trees and oak woodlands are related but are not identical. Losses of oak trees are to be mitigated by planting replacement trees (per the requirements of CLAOTO, BIO-22b, and previously incorporated Mitigation Measure SP-4.6-48), supplementing those

numbers with additional replacement trees as described in BIO-22c (for upland oak trees) and BIO-2.

This EIS/EIR requires additional oak woodland replacement at a ratio ranging from 2:1 to 3:1 for any oak woodland lost within jurisdictional streambeds (BIO-2) and at a ratio of 1:1 for woodland acreages lost outside of jurisdictional areas (BIO-22d). For impacts to upland oak woodlands, Newhall Land may enhance existing degraded woodland areas, at the increased ratio of 2:1.

All oak trees to be planted for CLAOTO compliance will be subject to species and performance criteria as specified in CLAOTO (see BIO-22b). Where CLAOTO replacement trees are planted in natural open areas such as the High Country SMA and Salt Creek areas, the planting areas will be planted and managed as natural woodlands, to include other characteristic woodland species and to provide habitat for a broader variety of wildlife than is possible in close proximity to development.

In addition, this EIS/EIR requires replacement of oak trees at a ratio of 0.5:1 for oak trees with dbh of 8 to 35 inches, and at a ratio of 2.5:1 for oak trees with dbh of 36 or more inches lost or impacted in uplands (BIO-22c). These trees are in addition to the CLAOTO requirement described above. These additional trees may also be incorporated into woodland habitat enhancement or creation.

This oak mitigation strategy will be outlined in an Oak Resource Management Plan, to be prepared by the applicant and submitted for approval to CDFG and County of Los Angeles, and implemented upon approval. The Plan shall identify areas suitable for oak woodland enhancement and creation. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional measures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and 22d for upland areas).

The Oak Resource Management Plan shall include measures to create or enhance woodlands as follows: (1) locations and acreages of mitigation sites where woodland creation or enhancement will; (2) a description of proposed cover and number of native trees, shrubs and grasses per acre to be established. This description shall be based on comparable intact woodlands in the area of impact or elsewhere within the RMDP planning area, consistent with conditions of the proposed mitigation site; (3) site preparation measures to include (as appropriate) topsoil treatment, soil decompaction, erosion control, weed grow/kill cycle, or as otherwise approved by the agencies; (4) methods for the removal of non-native plants (*e.g.*, mowing, weeding, raking, herbicide application, or burning); (5) a plant palette listing all species, including sizes, planting densities, or seeding rates, to be based on target vegetation; (6) the source of all plant propagules (seed, potted nursery stock, *etc.*) and the quantity and species of seed or potted stock of all plants to be introduced or planted into the mitigation areas; (7) temporary irrigation, protection from herbivores, fertilizer, weeding, *etc*.; (8) a schedule and action plan to maintain and monitor the

enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than 5 years total and no less than 2 years after removal of irrigation (if any); (9) where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the mitigation areas shall be implemented as needed; (10) tree protection standards to be implemented for individual trees or woodlands adjacent to development activity; (11) success criteria as stated in BIO-22b and BIO-22d; and (12) contingency measures, such as replanting, erosion control, irrigation system repair, or understory re-seeding, to be implemented if habitat improvement/restoration efforts do not meet the success criteria stated in the plan. The Oak Resource Management Plan would reduce impacts to oak trees by replacing trees and enhancing oak woodland habitat in the Project area.

As described in the Draft Newhall Ranch Mitigation Feasibility Study (Dudek 2007A), potential mitigation sites for three oak vegetation communities—valley oak/grass, coast live oak woodland, and valley oak woodland—were identified in the High Country SMA and Salt Creek area (**Figure 4.5-158**, Newhall Land – Potential Oak Mitigation Sites). A comprehensive evaluation identified approximately 111 acres considered suitable for creating specific oak vegetation communities, including 87 acres of valley oak/grass, 10 acres of coast live oak woodland, and 0.4 acre of valley oak woodland.

In addition to oak habitat mitigation, individual oak trees will be planted in several areas within the High Country SMA and Salt Creek area. In general, potential oak mitigation sites considered were sites mapped as oak vegetation communities (*e.g.*, coast live oak woodland, valley oak woodland, or valley oak/grass) that were sparse and could support additional oaks or sites that were disturbed (agricultural land, California annual grassland, or disturbed land) that could support individual oak trees. Approximately 111 acres were identified as suitable in a comprehensive evaluation (Dudek 2007A). Where individual oak trees would be lost within jurisdictional riparian areas, those impacts would be mitigated in accordance with jurisdictional riparian mitigation requirements of the previously incorporated mitigation measures and the mitigation measures recommended by this EIS/EIR (in particular BIO-2). Mitigation for individual oak trees will be incorporated as appropriate into individual Subnotification Conceptual Wetlands Mitigation Plans for wetlands and adjacent uplands areas along the River Corridor SMA and Open Areas (along tributaries to the Santa Clara River).

Regarding short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts will be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to

all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term, residual secondary impacts to the oak trees, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction will be minimized by additional measures restricting access to, grazing within, and recreational usage of the River Corridor SMA and High Country SMA; providing for transition areas along the River Corridor SMA and High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; placing restrictions on plant palettes proposed for use on landscaped slopes; and providing revegetation plans for the River Corridor SMA.

All specific mitigation measures for oak trees are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-174 IMPACTS TO INDIVIDUALS – OAK TREES

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, and/or mitigate the loss of oak trees.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where

feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-44 and SP-4.6-45 provide guidelines for major drainages.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

SP-4.6-48 lists standards for the restoration and enhancement of oak resources within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with

the current oak tree ordinance, oaks planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to reduce the loss of and/or harm to oak trees.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-22 requires the preparation and implementation of an Oak Resource Management Plan. The Plan shall identify areas suitable for oak woodland enhancement and creation. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional measures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and 22d for upland areas). The Oak Resource Management Plan would reduce impacts to oak trees by replacing and enhancing oak woodland in the Project area.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts associated with the impacts to oak trees would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-175 SECONDARY IMPACTS – OAK TREES

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to oak trees.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-20, SP-4.6-32, SP-4.6-34 and SP-4.6-35:

SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of

buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from hydrologic and water quality–related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages, and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7, SP-4.6-19, SP-4.6-26a, SP-4.6-33, and SP-4.6-43:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary.

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation, that native riparian plants be incorporated into landscaping where feasible, that roads and bridges be designed to discourage access to the River Corridor SMA, that bank stabilization be composed of ungrouted rock, and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-24, SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

Each potential secondary impact will be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-26a, SP-4.6-27, SP-4.6-28, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, SP-4.6-43, SP-4.6-46 and SP-4.6-47, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where

feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA. Mitigation Measure SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust; as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45 and BIO-52:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements, conduct meetings with contractor describing the importance of restricting work to the restricted areas, discuss procedures for minimizing harm to or harassment of wildlife, review the construction area in the field with the contractor in accordance with the final grading plan, conduct a final field review of staking, be present during initial vegetation clearing and grading, and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to further avoid and minimize impacts from accidental clearing, trampling, and grading, this EIS/EIR identifies Mitigation Measure BIO-42, which requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species

adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion and chemical and toxic compound pollution, and with hydrologic alterations and water quality impacts will also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measures BIO-69 and BIO-73:

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

In order to avoid and minimize impacts from increased fire frequency, this EIS/EIR identifies Mitigation Measure BIO-63, which requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

Each potential secondary impact will be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include BIO-1 through BIO-16, BIO-42, BIO-62, BIO-69, and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-42 requires that all CLAOTO-regulated oaks that will not be removed and that have driplines within 50 feet of land clearing or areas to be graded be enclosed by a temporary fence for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to oak trees would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

OAK-LEAVED NEMOPHILA (CNPS LIST 4.3/S3.3)

Life History

Oak-leaved nemophila (*Nemophila parviflora* var. *quercifolia)* is known to occur from Tuolumne County south through Kern County at elevations between 700 and 2,200 meters AMSL (CNPS 2007; University and Jepson Herbaria 2007). This species of the waterleaf family (Hydrophyllaceae) is an understory plant found primarily in forests, on slopes, and in ravines (Hickman 1993). The annual herb inhabits cismontane woodlands and lower montane coniferous forests and generally blooms from May to June (CNPS 2007).

In addition to the direct loss of individuals, oak-leaved nemophila is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the oak-leaved nemophila. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

During field surveys for this project, the first known specimen from Los Angeles County and the Transverse Ranges was collected in Long Canyon, on the Project site, at about 300 meters elevation. Observations of oak-leaved nemophila were made in 2003 and 2004 (Dudek and Associates 2004C, 2004F) and in 2005 (University and Jepson Herbaria 2009). This species was observed growing in the understory of oak woodland on gentle, northeast facing slopes.

Focused surveys were conducted in spring and summer 2002 through 2006, coincident with the annual blooming period for oak-leaved nemophila, which blooms from May through June (CNPS 2007). The surveys typically began in April and extended through August. Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed; this could explain why oak-leaved nemophila was not recorded in 2006 and 2007.

Given the status of the species (CNPS List 4.3), the exact locations of individuals of this species within the Project area have not been mapped. However, this species was found in an oak woodland east of Grapevine Mesa (Dudek and Associates 2004C, 2004F) and in an oak woodland at the northeast end of Long Canyon in 2005 (University and Jepson Herbaria 2009)

within the Specific Plan area. Oak-leaved nemophila is assumed to occur as an occasional component of oak woodlands within the Specific Plan area. Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals. A total of 1,468 acres of suitable habitat is present in the Project area (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct loss of 11 acres (0.7%) of suitable habitat for this species (within both the permanent and temporary footprints) out of 1,468 acres on site (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). No individuals would be directly lost by implementation of the SCP. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the direct loss of oak-leaved nemophila occupying this habitat as a result of construction/grading activities would be considered a substantial adverse effect on this species and would substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan area would result in the permanent loss of 85 acres (5.8%) of suitable habitat for this species (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). No suitable habitat would be lost as a result of build-out of the VCC and Entrada planning areas. It is possible that individual oak-leaved nemophila plants within this suitable habitat would be

lost as a result of build-out of the Specific Plan area. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the potential loss of oak-leaved nemophila as a result of build-out of the Specific Plan area would be considered a substantial adverse effect on this species and would substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan area would total 96 acres (6.5%). No suitable habitat would be lost as a result of build-out of the VCC and Entrada planning areas. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the combined direct and indirect permanent impacts to oak-leaved nemophila suitable habitat would have a substantial adverse effect on this species and would substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan area include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. There would be no secondary impacts associated with build-out of the VCC and Entrada planning areas. Although this species has a relatively low sensitivity ranking (California Heritage S3.3 ranking indicates no current threats known), the potential loss of oak-leaved nemophila and its suitable habitat resulting from these secondary impacts would not constitute a substantial adverse effect on this species and would not substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to suitable habitat for oak-leaved nemophila (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities):

- Alternative 3 – 11 acres (0.7%) of permanent loss;
- Alternative 4 – 10 acres (0.7%) of permanent loss;
- Alternative 5 – 14 acres (1.0%) of permanent loss;
- Alternative 6 – 19 acres (1.3%) of permanent loss; and
- Alternative 7 – 19 acres (1.3%) of permanent loss.

Compared to Alternative 2, which would result in 11 acres (0.7%) of permanent loss and 1.4 acre of temporary loss, the permanent and temporary loss of habitat under Alternatives 3 through 5 would not be substantially different. The difference between Alternatives 6 and 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternatives 6 and 7, which would result in greater loss of oak woodlands adjacent to the Santa Clara River and its tributaries.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan area would result in the following indirect impacts to suitable habitat for oak-leaved nemophila (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). No suitable habitat would be lost as a result of build-out of the VCC and Entrada planning areas.

- Alternative 3 – 66 acres (4.5%) of permanent loss;
- Alternative 4 – 65 acres (4.4%) of permanent loss;

- Alternative 5 – 66 acres (4.5%) of permanent loss;
- Alternative 6 – 41 acres (2.8%) of permanent loss; and
- Alternative 7 – 44 acres (3.0%) of permanent loss.

Compared to Alternative 2, which would result in 85 acres (5.8%) of indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 3 through 7 would impact fewer acres than Alternative 2 because of reductions in the Project footprint.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, impacts for Alternatives 3 through 7 would still be substantially adverse because of the loss of habitat on site. The indirect permanent loss of suitable habitat for oak-leaved nemophila occurring as a result of build-out of the Specific Plan area under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan area would result in the following impacts to suitable habitat for oak-leaved nemophila. No suitable habitat would be lost as a result of build-out of the VCC and Entrada planning areas.

- Alternative 3 – 77 acres (5.2%) of permanent loss;
- Alternative 4 – 75 acres (5.1%) of permanent loss;
- Alternative 5 – 80 acres (5.4%) of permanent loss;
- Alternative 6 – 60 acres (4.0%) of permanent loss; and
- Alternative 7 – 63 acres (4.2%) of permanent loss.

Compared to Alternative 2, which would result in 96 acres (6.5%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would not be substantially different compared with impacts associated with Alternative 2. Reduced impacts would occur because of reductions in the Project footprint for Alternatives 3 through 6, and additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions under Alternative 7 that reduce impacts to oak-leaved nemophila. The combined direct and indirect permanent loss of suitable habitat for oak-leaved nemophila occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan area under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan area under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. There would be no secondary impacts associated with build-out of the VCC and Entrada planning areas. The loss of or degradation of suitable habitat and the loss of individual oak-leaved nemophila due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan area under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to oak-leaved nemophila: (1) loss of habitat, and (2) secondary impacts to individuals outside the Project footprint.

Loss of habitat (and associated impacts to occasional individual oak-leaved nemophila plants) could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of oak-leaved nemophila habitat would range from 63 acres (4.2%) under Alternative 7 to 96 acres (6.5%) under Alternative 2. The combined permanent loss of this habitat would have a substantial adverse effect on this species. This loss would also conflict with CLAOTO and would constitute a significant impact on regulated trees. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals and associated habitat. At least 833 acres of suitable habitat will be conserved in the High Country SMA and Salt Creek area where long-term preservation and management will be provided.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts, would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term secondary impacts to oak-leaved nemophila, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; increased human activity, trampling, and soil compaction; and increased risk of fire, would be minimized by restricting access to, grazing within, and recreational usage of the High Country SMA; providing

for transition areas along the High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; and placing restrictions on plant palettes proposed for use on landscaped slopes.

All specific mitigation measures for oak-leaved nemophila are listed below and are described fully in **Subsection 4.5.6,** Mitigation Measures.

IMPACT 4.5-176 LOSS OF HABITAT – OAK-LEAVED NEMOPHILA

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures which will avoid, minimize, and/or mitigate the loss of habitat (oak woodland vegetation communities) for oak-leaved nemophila.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where oak woodland vegetation communities occurs. Transition from the development edge to the natural area (where oak woodland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA, which supports 566 acres of oak woodland vegetation communities.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or

endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to avoid, minimize, and/or mitigate the loss of habitat (oak woodland vegetation communities) for oak-leaved nemophila. BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support oak woodland vegetation communities. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts associated with the loss of habitat for oak-leaved nemophila would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-177 SECONDARY IMPACTS – OAK–LEAVED NEMOPHILA

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to oak-leaved nemophila.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA, and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where oak woodland vegetation communities occur. Transition from the development edge to the natural area (where oak woodland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where oak woodland vegetation communities occur. Transition from the development edge to the natural area (where oak woodland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where oak woodland vegetation communities occur. Transition from the development edge to the natural area (where oak woodland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from hydrologic and water quality–related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program

EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages (which are in proximity to oak woodland vegetation communities), and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs (which contain oak woodland vegetation communities) to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include SP-4.6-27, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, and SP-4.6-55 and SP-4.6-58:

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition

from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. This will benefit oak woodland vegetation communities located in proximity to drainages.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading, this EIS/EIR identifies Mitigation Measure BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-52, BIO-70, and BIO-71:

BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution would be further mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-69, which requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, this EIS/EIR identifies Mitigation Measures BIO-49 and BIO-52:

BIO-49 prohibits requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows. This will benefit oak woodland vegetation communities and any oak-leaved nemophila located in proximity to drainages.

BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the

importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from increased fire frequency, this EIS/EIR identifies Mitigation Measure BIO-63, which requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include BIO-19 and BIO-69:

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support oak woodland vegetation communities. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to oak-leaved nemophila would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

OJAI NAVARRETIA (CNPS LIST 1B.1/S2)

Life History

Ojai navarretia (*Navarretia ojaiensis*) was documented within the Project area during the 2003 field season, at which time the species was undescribed. The species was first described in 2007 as Ojai navarretia (Johnson 2007). While distinct from each of the following taxa, Ojai navarretia is undoubtedly closely related to Jared's navarretia (*N. jaredii*), downy pincushion plant (*N. pubescens*), and Piute mountains navarretia (*N. setiloba*). In 2003, when Ojai navarretia was first observed within the Project area, it was observed that Ojai navarretia differs from Jared's navarretia in that Ojai navarretia has a purple spot on the edge of the corolla tube, there are papillae in the tube, and the stems are not white hairy. It differs from downy pincushion plant in that Ojai navarretia has a purple spot and papillae in the tube, the bracts are slightly wider, and the flowers are smaller and whitish as opposed to larger and purple. It differs from Piute mountains navarretia in that the Ojai navarretia has a purple spot, narrower bracts, and a smaller flower (Dudek and Associates 2004I). The Ojai navarretia occurrences were noted in grasslands and in openings in California sagebrush (Dudek and Associates 2004A) and sparsely vegetated valley needle grasslands (Dudek and Associates 2004I). Soils where the Ojai navarretia occurs are all clay soils (Dudek and Associates 2004I). This species was observed on gentle to moderate north-facing slopes (Dudek and Associates 2004I) to growing on all but east-facing slopes and generally on relatively flat soil to slopes up to 40° (Dudek and Associates 2004A).

Ojai navarretia is described as a tap-rooted annual, low and spreading to erect. The stems are hairy or fuzzy and sometimes glandular; the base stem color is yellow-green suffused with purple or red. The plant blooms May through July. The white flowers are funnelform in shape with a purple spot. The fruit is a yellow capsule that splits open to release solitary seed. The plant is known from approximately 10 occurrences in Santa Clarita Valley (including within the Salt Creek area of the RMDP and SCP area, and the Ventura Homestead site located immediately to the west of the RMDP and SCP area), Ojai Valley, and the Santa Susana Mountains on dry, clay soils in openings in chaparral, coastal scrub, and native perennial grasslands (Johnson 2007; CNPS 2009).

In addition to the direct loss of individuals, Ojai navarretia is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the Ojai navarretia. Exotic plants can also alter

hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Ojai navarretia was only observed in the Salt Creek area in 2003. The Ojai navarretia occurrences were located on clay soils in grasslands, openings in California sagebrush, and sparsely vegetated valley needle grasslands. This species was observed on all but east-facing slopes, and generally on relatively flat soil to slopes up to 40° (Dudek and Associates 2004A, 2004I) (**Figure 4.5-17**, High Country SMA and Salt Creek Area – Special-Status Species Occurrences).

All surveys were conducted (2002 through 2007) during and after the blooming season for Ojai navarretia, which occurs from May through July (Johnson 2007; CNPS 2009). The surveys typically began in April and extended through August. Surveys in the Project development area in 2002 through 2005 focused on the identification of special-status plants. Surveys in the Project development area in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed. However, given the repeated surveys within the Specific Plan, VCC, and Entrada planning areas, it is assumed that the majority of Ojai navarretia plants on site was observed. This species has definitive habitat requirements and the surveys focused on suitable habitat (see above).

Ojai navarretia occurrences were mapped utilizing aerial photography and topographic maps. Professional judgment and experience were used to delineate these polygons based on the detectability of the species, topography, and vegetation.

Because weather conditions—primarily rainfall—may determine whether this species blooms in a given year, these factors likely affected the detection of Ojai navarretia. There was a less-than-average amount of rainfall in the 2001-2002, 2003-2004, and 2005-2006 rain seasons (WRCC 2008), and, during the 2006-2007 rain season (October 2006-September 2007), the Piru 2 ESE weather station in Los Angeles County experienced its driest year in recorded history, with 4.1 inches of rain—less than one-quarter of the normal mean amount (17.40 inches) (WRCC 2008). While the amount of rainfall varied during the survey years, the 2002-2003 and 2004-2005 rain seasons were above average, and the cumulative survey results are representative of the distribution of this species on site.

Two occurrences of the Ojai navarretia species (totaling approximately 60,000 individuals) were made between April and July 2003 (Dudek and Associates 2004I) during surveys that focused on the identification and location of special-status plant species. Because several years of surveys were conducted for Ojai navarretia and occurrences were mapped, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

At least 60,000 Ojai navarretia plants occurred in two locations within the Salt Creek area of the RMDP site in 2003. Neither of these mapped occurrences would be directly lost by implementation of the RMDP and the SCP. Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented Ojai navarretia occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. Implementation of the RMDP and the SCP would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). No direct impacts (Impacts to Individuals) are expected to occur; therefore, impacts would not be significant.

Indirect Permanent Impacts

Within the Specific Plan area, 60,000 Ojai navarretia individuals were observed in the Salt Creek area, outside of the Specific Plan development area. This species was not observed within the VCC and Entrada planning areas. Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the indirect permanent loss of Ojai navarretia individuals (**Figure 4.5-17,** High Country SMA and Salt Creek Area – Special-Status Species Occurrences). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented Ojai navarretia occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be

located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). No indirect permanent impacts (Impacts to Individuals) are expected to occur; therefore, impacts would not be significant.

Combined Direct and Indirect Permanent Impacts

The 60,000 Ojai navarretia plants known from the Project area occur within the Salt Creek area portion of the RMDP site. None of these individuals would be directly or indirectly lost as a result of implementing the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Ojai navarretia occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as Ojai navarretia has not been identified in the Project development area.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and the build-out of the Specific Plan, VCC, and Entrada planning areas include hydrologic alterations and water quality impacts; accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; increased risk of fire; increased human activity, trampling, and soil compaction. Within the RMDP and SCP study area, Ojai navarretia is located only in the Salt Creek area, outside of the impact footprint for the RMDP and the SCP and for the Specific Plan, VCC, and Entrada planning areas, and more than 1,000 feet from the nearest recreational trail. The potential for secondary impacts to affect the known occurrences of this species as a result of the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas is extremely limited and would likely be associated with inadvertent wildfire. This impact would not constitute a substantial adverse effect on this species or cause a substantial reduction in the number or a reduction in the range of this species (significance criteria 1 and 7). Secondary impacts would not be significant because impacts are not expected.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts and Indirect Permanent Impacts

The 60,000 Ojai navarretia plants known from the Project area occur within the Salt Creek area portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. The potential for impacts to individual Ojai navarretia plants as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2 impacts (no known occurrences would be impacted). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented Ojai navarretia occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. The relative risk of impacts to undocumented Ojai navarretia would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Direct and indirect impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Combined Direct and Indirect Permanent Impacts

The 60,000 Ojai navarretia plants known from the Project area occur within the Salt Creek area portion of the RMDP site. None of these individuals would be directly or indirectly lost as a result of implementing the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Ojai navarretia occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as Ojai navarretia has not been identified in the Project development area.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The impacts to individual Ojai navarretia and effects on its habitat due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would not be significant because impacts are not expected to occur.

Mitigation Strategy and Summary

This species would not be subject to significant direct, indirect or secondary impacts by the proposed Project. Construction activities would not occur in habitat occupied by this species. Although no mitigation is required, Ojai navarretia will benefit from previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required. In addition, the 60,000 known Ojai navarretia individuals would be conserved in the Salt Creek area.

PARISH'S SAGEBRUSH (LOCALLY REGULATED)

Life History

Parish's sagebrush (*Artemisia tridentata* ssp. *parishii)* is not a CNPS special-status species but is considered sensitive by the County of Los Angeles (County of Los Angeles 2003A). It is one of several recognized subspecies of *Artemisia tridentata*, a widespread and characteristic shrub throughout much of western North America. At the Newhall Ranch site, Parish's sagebrush occurs in stands with the more common big sagebrush (*Artemisia tridentata* ssp. *tridentata*) subspecies. According to The Jepson Manual (Hickman 1993), the differentiating characteristics between the two subspecies are as follows: drooping inflorescence branches with hairy achenes (*i.e.*, the matured flower ovaries with seeds inside) in Parish's sagebrush, inflorescence branches erect to spreading with glandular achenes in common big sagebrush. Parish's sagebrush occurs along coastal ranges in Baja California and southern California, extending inland to regions south of the Great Basin (Shultz 2006A, 2006B). It occurs in sandy soils of valleys and foothills. It is considered regionally rare by local botanists (Meyer 2007). Parish's sagebrush blooms from October through November (Munz 1974).It appears that these two subspecies hybridize, as the full range of characteristics (drooping and erect inflorescence branches and hairy and glandular fruit) were found among the collected specimens at Landmark Village within the RMDP and SCP area in November 2005 (Dudek and Associates 2006C). There were sagebrush plants with drooping inflorescence branches (Parish's sagebrush) and erect inflorescence branches (common big sagebrush) that co-occur there, so collections of both were made. After analyzing the characteristics of numerous samples, including examining the fruits under a microscope, it was determined that both subspecies occur there. The characteristics were generally consistent among individual plants that seemed to fit into either Parish's sagebrush or common big sagebrush (*i.e.*, a plant with drooping inflorescence branches and hairy fruit had drooping inflorescence branches and hairy fruit throughout the plant). However, plants that appeared to be hybrids sometimes had mixed characters throughout.

In addition to the direct loss of individuals, Parish's sagebrush is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as Parish's sagebrush. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Parish's sagebrush was observed within big sagebrush scrub along riparian corridors in the RMDP and SCP area (Dudek and Associates 2006C) and in Salt Creek (Dudek and Associates 2006B). This species has not been observed within the VCC planning area (Dudek and Associates 2002C, 2004B, 2004G, 2006H, 2006K; Dudek 2007H). This species was not observed in the Entrada planning area (Dudek and Associates 2002B, 2004E, 2004H, 2006E, 2006G, 2006J; Dudek 2007G), but there is moderate potential that Parish's sagebrush occurs within big sagebrush scrub in the study area. When observed, Parish's sagebrush was found primarily intermixed with common big sagebrush.

Because focused surveys were conducted in spring and summer (2001 through 2005), most occurred after the annual blooming period for Parish's sagebrush, which blooms October through November (Munz 1974). Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, consequently, the number of other documented special-status species observed; this could be an explanation for why Parish's sagebrush was recorded within the Specific Plan area in 2006 and not at all in 2007. The surveys typically began in April and extended through August. However, big sagebrush is identifiable to the species year round. The mapped big sagebrush scrub would likely include all of the on-site distribution of Parish's sagebrush.

Big sagebrush is the dominant species in big sagebrush scrub on site. The exact locations of individuals of the Parish's sagebrush subspecies within the Project area have not been mapped, but Parish's sagebrush is known to occur as a component of big sagebrush scrub within the Project area. In November 2005, Dudek collected samples from a variety of sagebrush plants at Landmark Village within the RMDP and SCP area to determine what percentage of Parish's sagebrush individuals were present within big sagebrush scrub. At that location, there were sagebrush plants with drooping inflorescence branches (Parish's sagebrush) and erect inflorescence branches (common big sagebrush) that co-occur there, so collections of both were made. After analyzing the characteristics of numerous samples, including examining the fruits under a microscope, it was determined that both subspecies occur there, as do hybrids of the subspecies (Dudek and Associates 2006C). Parish's sagebrush, which is considered special status by the County of Los Angeles, grows intermixed within the common big sagebrush subspecies, which has no special status. Therefore, impacts to Parish's sagebrush were evaluated by loss of habitat instead of impacts to individuals. A total of 93 acres of suitable habitat (big sagebrush scrub) is present in the Project area. (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct permanent loss of 24 acres (25.8%) and the direct temporary loss of 5.2 acres of suitable habitat on site out of approximately 93 acres on site (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). Potential impacts to individual Parish's sagebrush plants within big sagebrush scrub could occur. No individuals would be directly lost by implementation of the SCP. The loss of Parish's sagebrush as a result of implementation of the RMDP would constitute a substantial direct adverse effect on this species (significance criterion 1). Direct permanent and temporary impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the indirect permanent loss of 47 acres (50.5%) of big sagebrush scrub within the Project area (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). Given these impacts, it is foreseeable that individual Parish's sagebrush plants would be lost as a result of build-out of the Specific Plan and Entrada planning areas. This would constitute a substantial adverse effect on this species (significance criterion 1). No impacts related to the build-out of the VCC planning area are expected. Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would total 71 acres (76.3%). No impacts related to the build-out of the

VCC planning area are expected. The combined direct and indirect impacts to suitable habitat and associated loss of Parish's sagebrush plants would have a substantial adverse effect on this species (significance criterion 1). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. No impacts related to build-out of the VCC planning area are expected. The potential loss of Parish's sagebrush and the effect on its habitat as a result of these secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas would constitute a substantial adverse effect on this species and would conflict with local policies and ordinances protecting biological resources (significance criterion 1). Secondary impacts would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Parish's sagebrush:

- Alternative 3 – 22 acres (23.7%) of permanent loss and 6.2 acres of temporary loss;
- Alternative 4 – 22 acres (23.7%) of permanent loss and 5.1 acres of temporary loss;
- Alternative 5 – 22 acres (23.7%) of permanent loss and 6.6 acres of temporary loss;
- Alternative 6 – 16 acres (17.1%) of permanent loss and 6.5 acres of temporary loss; and
- Alternative 7 – 2.6 acres (2.8%) of permanent loss and 21 acres of temporary loss.

Compared to Alternative 2, which would result in 24 acres (25.8%) of permanent direct loss and 5.2 acres of temporary loss, the permanent and temporary loss of habitat under Alternatives 3 through 6 would not be substantially different (**Figures 4.5-34-A1** through

4.5-38-D2, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall direct loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, these impacts would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Parish's sagebrush. No impacts related to build-out of the VCC planning area are expected under Alternatives 3 through 7.

- Alternative 3 – 34 acres (36.6%) of permanent loss;
- Alternative 4 – 32 acres (34.4%) of permanent loss;
- Alternative 5 – 35 acres (37.6%) of permanent loss;
- Alternative 6 – 17 acres (17.8%) of permanent loss; and
- Alternative 7 – 9.3 acres (10.0%) of permanent loss.

Compared to Alternative 2, which would result in 47 acres (50.5%) of permanent indirect loss of habitat, Alternatives 3 through 7 would have reduced impacts (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). Alternatives 3 through 6 would impact relatively fewer acres than Alternative 2 because of reductions in the Project footprint. Alternative 7 would have the least impact because there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to Parish's sagebrush.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the loss of habitat on site. The indirect permanent loss of suitable habitat for Parish's sagebrush occurring as a result of build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas

would result in the following impacts to suitable habitat for Parish's sagebrush. No impacts related to build-out of the VCC planning area are expected under Alternatives 3 through 7.

- Alternative 3 – 56 acres (60.2%) of permanent loss;
- Alternative 4 – 54 acres (58.1%) of permanent loss;
- Alternative 5 – 57 acres (61.3%) of permanent loss;
- Alternative 6 – 32 acres (34.8%) of permanent loss; and
- Alternative 7 – 12 acres (12.8%) of permanent loss.

Compared to Alternative 2, which would result in 71 acres (76.3%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because of reductions in the Project footprint under Alternatives 3 through 6; additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions would occur under Alternative 7. The combined direct and indirect permanent loss of suitable habitat for Parish's sagebrush occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. No impacts related to build-out of the VCC planning area are expected under Alternatives 3 through 7. The loss of or degradation of suitable habitat and the loss of individual Parish's sagebrush due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to Parish's sagebrush: (1) loss of suitable habitat, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint. Impacts to habitat and associated individuals could occur during construction as a

result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of suitable habitat for Parish's sagebrush resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would range from 12 acres (12.8%) under Alternative 7 to 71 acres (76.3%) under Alternative 2. The combined permanent loss of habitat would constitute a substantial adverse effect on the habitat of this species and would substantially reduce the number or restrict the range of this species. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to habitat and associated individuals, which are typically associated with big sagebrush scrub along riparian corridors. The Project applicant will implement a series of mitigation measures designed to replace, restore, enhance, and maintain natural riparian communities in the Santa Clara River or its tributaries; and create new riparian communities in areas that currently support degraded or exotic vegetation. For riparian vegetation communities, this includes the direct replacement of riparian communities at a minimum 1:1 ratio for all permanently affected habitats in order to achieve the same functions and services that were lost through implementation of the proposed Project. Restoration shall be in kind and at a 1:1 replacement ratio for new vegetation communities if the replacement vegetation is installed two years in advance of the removal of existing vegetation communities. If the replacement vegetation communities cannot be installed prior to the two-year period, the restoration ratios would increase to ensure the replacement of lost functions and services. Mitigation designed to restore, enhance, or replace temporarily disturbed riparian vegetation communities focuses on achieving the required percent coverage and tree growth performance criteria for the proposed target species, as well as native species recruitment and reproduction. Mitigation measures will provide for the long-term maintenance of the River Corridor SMA, High Country SMA, and Open Area in a natural state by restricting access to and prohibiting grazing, agriculture, and recreation within these areas; providing for the restoration and enhancement of habitat within these areas; and through the open space dedication of these areas.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts, would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term, residual secondary impacts to the Parish's sagebrush, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction would be minimized by restricting access to, grazing within, and recreational usage of the River Corridor SMA and High Country SMA; providing for transition areas along the River Corridor SMA and High Country SMA; providing

drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; placing restrictions on plant palettes proposed for use on landscaped slopes; and providing revegetation plans for the River Corridor SMA.

All specific mitigation measures for Parish's sagebrush are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-178 LOSS OF HABITAT – PARISH'S SAGEBRUSH

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, and/or mitigate the loss of habitat for Parish's sagebrush.

In order to mitigate for impacts to riparian resources, the following mitigation measures will be implemented. SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA, and specifies mitigation requirements for each. SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester. SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub. SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In addition to restoration mitigation measures described above, Parish's sagebrush will benefit from the following preservation and management mitigation measures. SP-4.6-21 through SP-

4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA. Mitigation Measures SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to reduce the loss of habitat for Parish's sagebrush.

In addition to the riparian resource mitigation measures described above, the following mitigation measures will mitigate for impacts to riparian resources. BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

In addition to the restoration mitigation measures described above, Parish's sagebrush will benefit from the following preservation and management mitigation measure. BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, impacts associated with the loss of habitat for Parish's sagebrush would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-179 SECONDARY IMPACTS – PARISH'S SAGEBRUSH

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to Parish's sagebrush.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-20, SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA, and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages, and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7, SP-4.6-19, SP-4.6-26a, SP-4.6-33, and SP-4.6-43:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary.

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation, that native riparian plants be incorporated into landscaping where feasible, that roads and bridges be designed to discourage access to the River Corridor SMA, that bank stabilization be composed of ungrouted rock, and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-24, SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include SP-4.6-1

through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-26a, SP-4.6-27, SP-4.6-28, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, SP-4.6-43, SP-4.6-46 and SP-4.6-47, SP-4.6-47a, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA. Mitigation Measure SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust; as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45 and BIO-52:

BIO-45 defines the timing and design of stream diversion bypass channels and dewatering activities and related restrictions to ensure that proper construction, operation, and abandonment diversion or dewatering will occur.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion and chemical and toxic compound pollution and with hydrological alterations and water quality impacts would also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measures BIO-69 and BIO-73:

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include BIO-1 through BIO-16, BIO-62, BIO-69, and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Parish's sagebrush would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

PEIRSON'S MORNING-GLORY (CNPS LIST 4.2/S3.2)

Life History

Peirson's morning-glory (*Calystegia peirsonii*) is endemic to Los Angeles County in the northern San Gabriel Mountains and adjacent Mojave Desert (Antelope Valley). Its geographic range is relatively narrow, but it is widespread and locally common in the Liebre Mountains northeast of the Project area (Boyd 1999). It is in the morning-glory family (Convolvulaceae). It is found primarily on rocky slopes at elevations between 30 and 1,500 meters AMSL. It is a weakly climbing rhizomatous perennial, typically found in chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest, and grasslands. It generally blooms between April and June (CNPS 2007; Hickman 1993).

Peirson's morning-glory grows to about 0.4 meter in height. The leaf and bractlet size, shape, and position relative to the flower base are characteristic and important to identification. It hybridizes or intergrades with several related species where their geographic ranges overlap (Hickman 1993; Boyd 1999). Identifications are often difficult due to these intermediate plants.

No species-specific pollination or seed dispersal data are available for Peirson's morning-glory. However, a *Calystegia* study conducted in Japan revealed that bees were the primary pollinators, comprising 56.7% of the total visitor species (Ushimaru and Kikuzawa 1999).

In addition to the direct loss of individuals, Peirson's morning-glory is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the Peirson's morning-glory. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Observations of Peirson's morning-glory in 2002, 2003, 2004, 2005, and 2006 (Dudek and Associates 2002A, 2002B, 2004B, 2004C, 2004E, 2004F, 2004G, 2004H, 2004I, 2006B, 2006F, 2006G, 2006H, 2006I, 2006K; FL*x* 2002A) were made during surveys that focused on the identification and location of special-status species.

Because focused surveys were conducted in spring and summer (2001 through 2005), most occurred during and after the annual blooming period for Peirson's morning-glory, which blooms

from April to June (CNPS 2007). The surveys typically began in April and extended through August. Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, consequently, the number of other documented special-status species observed; this could be an explanation for why Peirson's morning-glory was recorded within the Specific Plan and VCC planning areas in 2006 but not in 2007, and why this species was not recorded within the Entrada planning area in either 2006 or 2007.

While never abundant, Peirson's morning-glory is widespread on site and was observed on ridges and slopes, weakly climbing over chaparral, coastal scrub, and grasslands throughout the Specific Plan, VCC, and Entrada planning areas, and the High Country SMA and Salt Creek area. Given the low sensitivity status of the species, the exact locations of individuals of this species within the Project area have not been mapped. Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals. A total of 8,780 acres of suitable habitat (chaparral, coastal scrub, and grassland vegetation communities) is present in the Project area (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct loss of 95 acres (1.1%) of suitable habitat for this species (within both the permanent and temporary footprints) out of 8,780 acres of suitable habitat on site (**Figures 4.5-33-A1** through **4.5-33-D2**). No individuals would be directly lost by implementation of the SCP. The direct loss of Peirson's morning-glory plants occupying this habitat as a result of construction/grading activities would have a substantial adverse effect on a species considered threatened by

CDFG (S3.2) (significance criterion 1). Direct impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the indirect permanent loss of 2,966 acres (33.8%) of suitable habitat within these development areas (**Figures 4.5-33-A1** through **4.5-33-D2**). It is possible that individual Peirson's morning-glory plants within these vegetation communities would be lost as a result of build-out of the Specific Plan, VCC, and Entrada planning areas. Although the number of individuals potentially affected would be minimal, the direct loss of Peirson's morning-glory occupying this habitat as a result of construction/grading activities would have a substantial adverse effect on a species considered threatened by CDFG (S3.2) (significance criterion 1). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3,061 acres (34.9%). Although the number of individuals potentially affected would be minimal, the direct loss of Peirson's morning-glory occupying this habitat as a result of construction/grading activities would have a substantial adverse effect on a species considered threatened by CDFG (S3.2) (significance criterion 1). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. Because of the widespread presence of this species on site in proximity to proposed development areas, short-term and long-term secondary impacts are expected to occur to this species. The potential loss of Peirson's morning-glory and the effect on its habitat as a result of the secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas would constitute a substantial adverse effect on a special-status species and would substantially reduce the number or restrict the range of an endangered, rare, or threatened species (significance criteria 1 and 7). Secondary impacts associated with build-out of the Specific Plan, VCC, and Entrada planning areas would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct permanent and temporary impacts to suitable habitat for Peirson's morning-glory (**Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 106 acres (1.2%) of permanent loss;
- Alternative 4 – 94 acres (1.1%) of permanent loss;
- Alternative 5 – 124 acres (1.4%) of permanent loss;
- Alternative 6 – 146 acres (1.7%) of permanent loss; and
- Alternative 7 – 136 acres (1.5%) of permanent loss.

Compared to Alternative 2, which would result in the direct loss of 95 acres (1.1%) of suitable habitat, the direct loss of habitat under Alternatives 3 through 6 would not be substantially different. The difference between Alternative 7 and Alternative 2 is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for Peirson's morning-glory (**Figures 4.5-34-A1** through **4.5-38-D2**):

- Alternative 3 – 2,798 acres (31.9%) of permanent loss;
- Alternative 4 – 2,692 acres (30.7%) of permanent loss;
- Alternative 5 – 2,612 acres (29.7%) of permanent loss;
- Alternative 6 – 2,347 acres (26.7%) of permanent loss; and
- Alternative 7 – 2,062 acres (23.5%) of permanent loss.

Compared to Alternative 2, which would result in 2,966 acres (33.8%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts. Alternatives 4 through 6 would impact fewer acres than Alternative 3 because VCC would not be constructed. Alternative 7 would have the least impact because VCC would not be constructed and there would be additional pullbacks from the Santa Clara River and its tributaries and other changes in the Project footprint that would reduce impacts to Peirson's morning-glory.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, impacts for Alternatives 3 through 7 would still be substantially adverse because of the loss of habitat on site. The indirect permanent loss of suitable habitat for Peirson's morning-glory occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for Peirson's morning-glory:

- Alternative 3 – 2,904 acres (33.1%) of permanent loss;
- Alternative 4 – 2,786 acres (31.7%) of permanent loss;
- Alternative 5 – 2,736 acres (31.2%) of permanent loss;
- Alternative 6 – 2,493 acres (28.4%) of permanent loss; and
- Alternative 7 – 2,198 acres (25.0%) of permanent loss.

Compared to Alternative 2, which would result in 3,061 acres (34.9%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7, and additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions would occur under Alternative 7. The combined direct and indirect permanent loss of suitable habitat for Peirson's morning-glory occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The loss of or degradation of suitable habitat and the loss of individual Peirson's morning-glory due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to Peirson's morning-glory: (1) loss of habitat, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Loss of habitat (and associated impacts to occasional individual Peirson's morning-glory plants) could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of Peirson's morning-glory habitat would range from 2,198 acres (25.0%) under Alternative 7 to 3,061 acres (34.9%) under Alternative 2. The combined permanent loss of this habitat would have a substantial adverse effect on this species. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. At least 3,668 acres of suitable habitat will be conserved in the High Country SMA and Salt Creek area where long-term preservation is provided. Mitigation measures for the preservation and management of the 4,205-acre High Country SMA would protect approximately 2,726 acres of suitable Peirson's morning-glory habitat (Dudek 2007A) and would allow Peirson's morning-glory to persist on site in perpetuity.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term secondary impacts to Peirson's morning-glory, such as the introduction of non-native,

invasive plant species; hydrologic alterations and water quality impacts; increased human activity, trampling, and soil compaction; and increased risk of fire, would be minimized by restricting access to, grazing within, and recreational usage of the High Country SMA; providing for transition areas along the High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; and placing restrictions on plant palettes proposed for use on landscaped slopes.

All specific mitigation measures for Peirson's morning-glory are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-180 LOSS OF HABITAT – PEIRSON'S MORNING GLORY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, or mitigate the loss of habitat (chaparral, coastal scrub, and grassland vegetation communities) for Peirson's morning-glory.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral, coastal scrub, and grassland vegetation communities occurs. Transition from the development edge to the natural area (where chaparral, coastal scrub, and grassland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High

Country SMA, which supports 2,726 acres of chaparral, coastal scrub, and grassland vegetation communities.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends four mitigation measures to reduce the loss of habitat (chaparral, coastal scrub, and grassland vegetation communities) for Peirson's morning-glory.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support chaparral, coastal scrub, and grassland vegetation communities and Peirson's morning-glory occurrences. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to a NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, impacts associated with the loss of habitat for Peirson's morning-glory would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-181 SECONDARY IMPACTS – PEIRSON'S MORNING-GLORY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to Peirson's morning-glory.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA, and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral, coastal scrub, and grassland vegetation communities occur. Transition from the development edge to the natural area (where chaparral, coastal scrub, and grassland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral, coastal scrub, and grassland vegetation communities occur. Transition from the development edge to the natural area (where chaparral, coastal scrub, and grassland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where chaparral, coastal scrub, and grassland vegetation communities occur. Transition from the development edge to the natural area (where chaparral, coastal scrub, and grassland vegetation communities occur) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages (which are in proximity to chaparral, coastal scrub, and grassland vegetation communities), and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition

from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs (which contain chaparral, coastal scrub, and grassland vegetation communities) to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include SP-4.6-27, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, and SP-4.6-55 and SP-4.6-58:

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. This will benefit chaparral, coastal scrub, and grassland vegetation communities located in proximity to drainages.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading, this EIS/EIR identifies Mitigation Measure BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-52, BIO-70, and BIO-71:

BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution would be further mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure

that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-69, which requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, this EIS/EIR identifies Mitigation Measures BIO-49 and BIO-52:

BIO-49 requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows. This will benefit chaparral, coastal scrub, and grassland vegetation communities and any Peirson's morning-glory located in proximity to drainages.

BIO-52 states that, prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from increased fire frequency, this EIS/EIR identifies Mitigation Measure BIO-63, which requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include BIO-19, BIO-20, BIO-21, and BIO-69:

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support chaparral, coastal scrub, and grassland vegetation communities and Peirson's morning-glory occurrences. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Peirson's morning-glory would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

PLUMMER'S MARIPOSA LILY (CNPS LIST 1B.2/S3.2)

Life History

Plummer's mariposa lily (*Calochortus plummerae*) is known to occur in Riverside, San Bernardino, Orange, Los Angeles, and Ventura counties at elevations between 100 and 1,700 meters AMSL. Records exist for the south side of the Santa Susana Mountains and Simi Hills adjacent to the Project area. This bulbiferous herb is typically found in chaparral, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland, often on granitic and/or rocky soils, and blooms between May and July (CNPS 2007). It is identified by its (usually) toothed petal margins; petals covered with long yellow hairs inside; and its round, slightly depressed nectar gland at the base of each petal surrounded by hairs but without hairs on the nectary surface itself (Hickman 1993). No species-specific pollination or seed dispersal data are available for Plummer's mariposa lily. Seed dispersal for *Calochortus* is limited, with no obvious adaptations for wind or animal dispersal; fruits are capsular and borne close to the ground, with relatively heavy, passively dispersed seeds that lack fleshiness, sticktights, or (except in one species) wings (Patterson and Givnish 2003). Typically, *Calochortus* flowers are generalists in terms of their pollinators, although bees have been observed to be the primary pollinator in some *Calochortus* species, such as Lyall's mariposa lily (*C. lyallii*) (Dilley *et al.* 2000; Miller 2000).

Perennial bulbs, including Plummer's mariposa lily, may persist below ground without producing flowers or even leaves during years of poor rainfall or other environmental causes. For example, bulbs tend to flower in higher numbers following wildfire, which introduces large quantities of mineral nutrients (as ash) into the soil. Dormant plants (those producing no aboveground growth in a given year) cannot be located by field botanists, and those producing only leaves are unlikely to be found during surveys because the leaves are inconspicuous and visually similar to grass leaves. Thus, numbers of plants observed above ground fluctuates much more widely than numbers of living bulbs in the soil. The number of plants censused even in a "good" year is a minimum estimate of the number of living bulbs in the soil.

In addition to the direct loss of individuals, Plummer's mariposa lily is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the Plummer's mariposa lily. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Plummer's mariposa lily was only observed in the High Country SMA on steep southwest-facing ridges and slopes in coastal scrub and grasslands. The plants were generally mapped in areas of high vegetative cover and a variety of soil types (*e.g.*, gravelly loam, sandy loam, and rocky clay) (Dudek and Associates 2006B) (**Figure 4.5-17**, High Country SMA and Salt Creek Area – Special-Status Species Occurrences).

All surveys were conducted (2002 through 2007) during and after the blooming season for Plummer's mariposa lily, which occurs from May through July (CNPS 2007). As mentioned above in the Life History section, only a fraction of *Calochortus* plants flower in any given year, and the non-flowering individuals are generally not as visible. It is therefore not possible to estimate what portion was observed. In addition, surveys in the Project development area in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed. However, given the repeated surveys within the Specific Plan, VCC, and Entrada planning areas, it is assumed that the majority of Plummer's mariposa lily plants on site was observed.

Plummer's mariposa lily occurrences were mapped utilizing aerial photography and topographic maps. Professional judgment and experience were used to delineate these polygons based on the detectability of the species, topography, and vegetation. This and other perennial special-status plants were mapped at a 10- to 20-meter (32.8- to 65.6-foot) scale due to their population dynamics (including seed dispersal and pollination range), observability, habit, habitat limitations, and mapping accuracy.

Because weather conditions—primarily rainfall—largely determine whether this species blooms in a given year, these factors likely affected the detection of the Plummer's mariposa lily. There was a less-than-average amount of rainfall in the 2001-2002, 2003-2004, and 2005-2006 rain seasons (WRCC 2008), and, during the 2006-2007 rain season (October 2006-September 2007), the Piru 2 ESE weather station in Los Angeles County experienced its driest year in recorded history, with 4.1 inches of rain—less than one-quarter of the normal mean amount (17.40 inches) (WRCC 2008). While the amount of rainfall varied during the survey years, the 2002-2003 and 2004-2005 rain seasons were above average, and the cumulative survey results are representative of the distribution of this species on site.

Within the RMDP and SCP sites, Plummer's mariposa lily was found only in the High Country SMA. An estimated number of approximately 78 individuals occupying five locations was observed (Dudek and Associates 2006B). Because several years of mapped occurrence data are available for Plummer's mariposa lily, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see Subsection 4.5.5.2.2 for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

At least 78 Plummer's mariposa lily plants occur in five locations within the High Country SMA portion of the RMDP and SCP site. None of these individuals would be directly lost by implementation of the RMDP and the SCP. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Direct impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area.

Indirect Permanent Impacts

Within the Specific Plan area, 78 Plummer's mariposa lily individuals were observed in the High Country SMA, outside of the Specific Plan development area. This species was not observed within the VCC and Entrada planning areas. Therefore, build-out of the Specific Plan, VCC, and Entrada planning areas would not result in the loss of known Plummer's mariposa lily plants (**Figure 4.5-146,** Alternative 2 Impacts to RMDP/SCP Special-Status Plants). Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, **t**here is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in the Specific Plan development area. Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this

species(even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area.

Combined Direct and Indirect Permanent Impacts

The 78 Plummer's mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly or indirectly lost as a result of implementing the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in a substantial adverse effect on this species (even if a few plants were to be located in the development area prior to construction), and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) to this species would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and the build-out of the Specific Plan, VCC, and Entrada planning areas include the introduction of non-native, invasive plant and animal species; vegetation clearing; trampling; the introduction of chemical pollutants; increased fire frequency; exposure to fugitive dust; contact with polluted runoff; and changes in hydrology. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. Within the RMDP and SCP study area, Plummer's mariposa lily is located only in the High Country SMA, outside of the impact footprint for the RMDP and the SCP and for the Specific Plan, VCC, and Entrada planning areas. The potential for secondary impacts to affect the known occurrences of this species as a result of the implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas is extremely limited and would likely be associated with inadvertent wildfire. This impact would not constitute a substantial adverse effect on this species or cause a substantial reduction in the number or a reduction in the

range of this species (significance criteria 1 and 7). Secondary impacts would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area or within 300 feet of the Project development area.

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts and Indirect Permanent Impacts

The 78 Plummer's mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas (**Figures 4.5-147** through **4.5-151**, Alternatives 3 through 7 Impacts to RMDP/SCP Special-Status Plants). The potential for impacts to individual Plummer's mariposa lily plants as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to Alternative 2. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented Plummer's mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different alternatives. Direct and indirect impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would be similar to Alternative 2. The 78 Plummer's mariposa lily plants known from the Project area occur only within the High Country SMA portion of the RMDP site. None of these individuals would be directly lost by implementation of the RMDP or the SCP, or build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented Plummer's mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented Plummer's mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different

alternatives. Combined direct and indirect permanent impacts (Impacts to Individuals) would not be significant because impacts are not expected to occur.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. The impacts to individual Plummer's mariposa lily and the effect on its habitat due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would not be significant because impacts are not expected to occur as Plummer's mariposa lily has not been identified in the Project development area.

Mitigation Strategy and Summary

This species would not be subject to significant direct, indirect or secondary impacts by the proposed Project. Construction activities would not occur in habitat occupied by this species. Although no mitigation is required, Plummer's mariposa lily will benefit from previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required. In addition, the 78 known Plummer's mariposa lily would be conserved in the High Country SMA.

SLENDER MARIPOSA LILY (CNPS LIST 1B.2/S1.1?)

Life History

Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) is known to occur in the southern San Gabriel Mountains of eastern Los Angeles County and the Santa Susana Mountains in western Los Angeles and Ventura counties at elevations between about 360 and 1,000 meters AMSL. This bulb-forming herb is typically found in chaparral, coastal scrub, and grasslands, often on clay and/or rocky soils, and blooms from March through June. The lily has been documented to occur at the mouth of Pico Canyon and other canyons in the vicinity (USGS, Newhall quad; CDFG 2007A).

No species-specific pollination or seed dispersal data are available for slender mariposa lily. Seed dispersal for *Calochortus* is limited, with no obvious adaptations for wind or animal dispersal; fruits are capsular and borne close to the ground, with relatively heavy, passively dispersed seeds that lack fleshiness, sticktights, or (except in one species) wings (Patterson and Givnish 2003). Typically, *Calochortus* flowers are generalists in terms of their pollinators, although bees have been observed to be the primary pollinator in other *Calochortus* species, such as Lyall's mariposa lily (*C. lyallii*) (Dilley *et al.* 2000; Miller 2000).

Perennial bulbs, including slender mariposa lily, may persist below ground without producing flowers or even leaves during years of poor rainfall or other environmental causes. For example, bulbs tend to flower in higher numbers following wildfire, which introduces large quantities of mineral nutrients (as ash) into the soil. Dormant plants (those producing no aboveground growth in a given year) cannot be located by field botanists, and those producing only leaves are unlikely to be found during surveys because the leaves are inconspicuous and visually similar to grass leaves. Thus, numbers of plants observed above ground fluctuates much more widely than numbers of living bulbs in the soil. The number of plants censused even in a "good" year is a minimum estimate of the number of living bulbs in the soil.

In addition to the direct loss of individuals, slender mariposa lily is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the slender mariposa lily. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development. This plant may also be lost through collection by humans.

Survey Results

Slender mariposa lily were observed on the Project site during numerous field surveys (**Subsection 4.5.3.2**, Survey Methods). Focused field studies to census slender mariposa lily were completed in the years 2002 through 2006 (Dudek and Associates 2004C, 2004E, 2004F, 2004G, 2004H, 2004I, 2006B, 2006F, 2006G, 2006H, 2006I; FL*x* 2004B, 2005, 2006A), although the 2002 field work was conducted late in the season.

All surveys were conducted during and after the blooming season for slender mariposa lily, which occurs from March to June (CNPS 2007); therefore, some counts (especially in 2002) were reliant on finding plants in fruit, when they are less conspicuous. As mentioned above in the Life History section, only a fraction of *Calochortus* plants flower in any given year, and the non-flowering individuals are generally not as visible. Moreover, because fruiting individuals are much more cryptic than flowering plants, it is expected that the fruiting individuals observed were a subset of the plants that were in flower earlier; it is not possible to estimate what portion was observed. In addition, surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, subsequently, the number of other documented special-status species observed. However, given the repeated surveys within the Specific Plan, VCC, and Entrada planning areas, it is assumed that the majority of slender mariposa lily plants and occupied habitat on site was observed and delineated.

Slender mariposa lily occurrences were mapped utilizing aerial photography and topographic maps. Professional judgment and experience were used to delineate these polygons based on the detectability of the species, topography, and vegetation. This and other perennial special-status plants were mapped at a 10- to 20-meter (32.8- to 65.6-foot) scale due to their population dynamics (including seed dispersal and pollination range), observability, habit, habitat limitations, and mapping accuracy.

Because weather conditions—primarily rainfall—largely determine whether this species blooms in a given year, these factors, along with a relatively late survey period in 2002, likely affected the detection of slender mariposa lily. Slender mariposa lily census numbers varied widely from year to year. At most sites, numbers were highest in 2003, and numbers were substantially lower in 2002 and 2004. There was a less-than-average amount of rainfall in the 2001-2002, 2003-2004 and 2005-2006 rain seasons (WRCC 2008), and during the 2006-2007 rain season (October 2006-September 2007), the Piru 2 ESE weather station in Los Angeles County experienced its driest year in recorded history, with 4.1 inches of rain—less than one-quarter of the normal mean amount (17.40 inches) (WRCC 2008). Although there was a less-than-average amount of rainfall in 2004, numbers of slender mariposa lily in the Specific Plan Development Area increased about 20-fold during the same year. Presumably, this is due to a wildfire in that area, which would have caused increased water and soil nutrient availability by eliminating competing plant cover and adding ash

to the soil that could compensate for below-average rainfall. While wildfire presumably affected the numbers of slender mariposa lily in 2004, and the amount of rainfall varied during the survey years, with the 2002-2003 and 2004-2005 rain seasons being above average, the cumulative survey results are representative of the distribution of this species on site.

Slender mariposa lily is locally abundant in some parts of the RMDP and SCP area. Within the Project area, it was typically observed in coastal scrub (with California sagebrush and California buckwheat scrub) and California annual grassland. Most occurrences were mapped in areas of high vegetative cover and a variety of soil types (*e.g.*, gravelly loam, silty loam, sandy loam, clay loam, and rocky clay). **Table 4.5-62**, Slender Mariposa Lily Individuals Observed, provides a summary of population data for slender mariposa lily that occur within VCC and Entrada planning areas, and the main geographic areas of the RMDP area. Because several years of mapped occurrence data are available for slender mariposa lily, impacts to this species were evaluated by impacts to individuals rather than by loss of habitat.

Table 4.5-62
Slender Mariposa Lily Individuals Observed

	Total Individuals			
Location	**2003**	**2004**	**2005**	**2006**
Specific Plan Development Area	6,764	66,769	4,465	322
High Country	4,350	125	143	370
Salt Creek Area	22,587	—	—	1
RMDP (Subtotal)	**33,701**	**66,894**	**4,608**	**693**
VCC	500	4	598	—
Entrada	4,344	202	2,389	—
Total	**38,545**	**66,100**	**7,595**	**693**

Table 4.5-63, Slender Mariposa Lily Cumulative Occupied Area Observed, provides a summary of cumulative occupied area for slender mariposa lily for the years 2002-2006, that occur within VCC and Entrada planning areas, and the main geographic areas of the RMDP area.

Table 4.5-63
Slender Mariposa Lily Cumulative Occupied Area Observed

Location	**Total Cumulative Area (Acres)**
Specific Plan Development Area	65
High Country SMA	30
Salt Creek Area	73
RMDP (Subtotal)	**168**
VCC	3.3
Entrada	34
Total	**205**

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Impacts to Individuals

Direct Permanent and Temporary Impacts

At least 66,100 slender mariposa lily plants—the maximum number recorded in a given year (2004) (**Table 4.5-62**)—occur in 627 locations, occupying 205 acres throughout portions of the RMDP and SCP area. Of this total, 0.7 acre (0.3%) of cumulative occupied area (**Table 4.5-64**, Impacts to Slender Mariposa Lily Cumulative Occupied Area by Alternative), where 52 documented individuals—the maximum potentially impacted by implementation of the RMDP in any given year (2005) (**Table 4.5-65**, Impacts to Slender Mariposa Lily Individuals by Alternative), representing approximately 0.08% of the total plants on site—would be directly lost by construction of RMDP facilities (within both the permanent and temporary footprints) (**Figure 4.5-146**, Alternative 2 Impacts to RMDP/SCP Special-Status Plants). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented slender mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, possibly including areas to be disturbed by construction. No individuals would be directly lost by implementation of the SCP. The loss of slender mariposa lily occurring as a result of implementation of the RMDP and the SCP would not be considered a substantial adverse effect on this species and these activities would not substantially reduce the number or restrict the range of this species (significance criteria 1 and 7). Direct permanent and temporary impacts (Impacts to Individuals) would be adverse but not significant.

Table 4.5-64
Impacts to Slender Mariposa Lily Cumulative Occupied Area by Alternative

Alternative	RMDP/SCP Direct Impacts (Acres)	Specific Plan Indirect Impacts (Acres)	VCC Indirect Impacts (Acres)	Entrada Indirect Impacts (Acres)	Total Indirect Impacts (Acres)	Total Acreage Impacted
1	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
2	0.7 (0.3%)	37 (18.0%)	2.9 (1.0%)	31 (15.2%)	71 (35.0)	72 (35.0%)
3	0.7 (0.3%)	32 (15.4%)	2.9 (1.0%)	30 (14.4%)	64 (31.5%)	65 (31.5%)
4	0.7 (0.3%)	32 (15.4%)	0 (0%)	30 (14.4%)	61 (30.1%)	62 (30.1%)
5	0.7 (0.3%)	28 (13.5%)	0 (0%)	22 (10.7%)	50 (24.6%)	50 (24.6%)
6	0.2 (0.1%)	27 (13.2%)	0 (0%)	21 (10.3%)	49 (23.6%)	49 (23.6%)
7	0.3 (0.2%)	24 (11.7%)	0 (0%)	30 (14.4%)	54 (26.3%)	54 (26.3%)

Table 4.5-65
Impacts to Slender Mariposa Lily Individuals by Alternative

Alternative	RMDP/SCP Direct Impacts to Individuals	Specific Plan Indirect Impacts to Individuals	VCC Indirect Impacts to Individuals	Entrada Indirect Impacts to Individuals	Total Indirect Impacts to Individuals	Total Individuals Impacted
1	0	0	0	0	0	0
2	52 (0.08%)	25,962 (39.3%)	504 (0.8%)	4,128 (6.2%)	30,593 (46.3%)	30,645 (46.4%)
3	52 (0.08%)	25,038 (37.9%)	504 (0.8%)	3,888 (5.9%)	29,429 (44.5%)	29,481 (44.6%)
4	52 (0.08%)	25,038 (37.9%)	0 (0%)	3,888 (5.9%)	28,926 (43.8%)	28,978 (43.8%)
5	51 (0.08%)	5,196 (7.9%)	0 (0%)	3,774 (5.7%)	8,970 (13.6%)	9,021 (13.3%)
6	21 (0.03%)	24,763 (37.5%)	0 (0%)	3,758 (5.7%)	28,521 (43.1%)	28,546 (43.2%)
7	16 (0.02%)	4,898 (7.4%)	0 (0%)	3,900 (5.9%)	8,798 (13.3%)	8,814 (13.3%)

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the indirect permanent loss of slender mariposa lily plants (**Figure 4.5-146**, Alternative 2 Impacts to RMDP/SCP Special-Status Plants). For purposes of this analysis, impacts are assessed using the cumulative occupied area and the year in which the greatest number of individual lilies would be impacted (**Tables 4.5-64** and **4.5-65**). Build-out of the Specific Plan area would result in the loss of 37 acres (18.0%) of cumulative occupied area,

representing approximately 25,962 documented individual slender mariposa lily plants, representing 39.3% of the total plants within that planning area. Build-out of the VCC planning area would result in the loss of 2.9 acres (1.0%) of cumulative occupied area, representing approximately 504 documented slender mariposa lily individuals, representing 0.8% of the total individuals observed within that planning area. Build-out of the Entrada planning area would result in to the loss of 31 acres (15.2%) of cumulative occupied area, representing approximately 4,128 documented individual slender mariposa lily plants, representing 6.2% of the total individuals within that planning area. In total, the build-out of the Specific Plan, VCC, and Entrada planning areas would result in the indirect loss of 71 acres (35.0%) of cumulative occupied area, or 30,593 plants (46.3%). Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented slender mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The loss of slender mariposa lily occurring as a result of build-out of the Specific Plan, VCC, and Entrada planning areas would be considered a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species on site (significance criteria 1 and 7). Indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of slender mariposa lily cumulative occupied area and individuals resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 72 acres (35.0%) and 30,645 (46.4%) individuals, respectively. The loss of slender mariposa lily occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would be considered a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species on site (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Impacts to Individuals) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include hydrologic alterations and water quality impacts; accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; increased risk of fire; and increased human activity, collecting, trampling, and soil compaction. For purposes of this analysis, it is assumed

that the effects of the secondary impacts (and the potential for loss of slender mariposa lily) would be greatest within 300 feet of development (CBI 2000). Under Alternative 2, there would be 33 acres (16.3%) of cumulative occupied area and 23,963 individuals (36.3%) within 300 feet of development (**Table 4.5-66** Slender Mariposa Lily Individuals within 300 Feet of Development by Alternative; **Table 4.5-67** Slender Mariposa Lily Cumulative Occupied Area within 300 Feet of Development by Alternative). The loss of or degradation of suitable habitat, the loss of individual slender mariposa lily, and periodic adverse impacts to their growth or reproductive success (*e.g.*, flower collecting) would be considered a substantial adverse effect on this species and would substantially reduce the number and a reduction in the range of this species on site (significance criteria 1 and 7). Secondary impacts would be significant, absent mitigation.

Table 4.5-66
Slender Mariposa Lily Individuals within 300 Feet of Development by Alternative

Alternative	RMDP/SCP 300-Foot Buffer (Individuals)	VCC 300-Foot Buffer (Individuals)	Entrada 300-Foot Buffer (Individuals)	Total 300-Foot Buffer (Individuals)
1	0	0	0	0
2	20,058 (30.3%)	177 (0.3%)	3,728 (5.6%)	23,963 (36.3%)
3	21,794 (33.0%)	177 (0.3%)	3,279 (5.0%)	25,250 (38.2%)
4	21,785 (33.0%)	0 (0%)	3,279 (5.0%)	25,064 (37.9%)
5	4,764 (7.2%)	0 (0%)	3,493 (5.3%)	8,258 (12.5%)
6	21,129 (32.0%)	0 (0%)	3,028 (4.6%)	24,157 (36.5%)
7	5,721 (8.7%)	0 (0%)	4,630 (7.0%)	10,351 (15.7%)

Table 4.5-67
Slender Mariposa Lily Cumulative Occupied Area within 300 Feet of Development by Alternative

Alternative	RMDP/SCP 300-Foot Buffer (Acres)	VCC 300-Foot Buffer (Acres)	Entrada 300-Foot Buffer (Acres)	Total 300-Foot Buffer Impacted
1	0	0 (0%)	0 (0%)	0
2	24 (11.8%)	0.6 (0.3%)	8.6 (4.2%)	33 (16.3%)
3	27 (13.1%)	0.6 (0.3%)	9.5 (4.7%)	37 (18.0%)
4	26 (12.9%)	0 (0%)	9.5 (4.7%)	36 (17.5%)
5	21 (10.3%)	0 (0%)	6.8 (3.3%)	28 (13.6%)
6	21 (10.2%)	0 (0%)	8.6 (4.2%)	30 (14.4%)
7	16 (7.9%)	0 (0%)	9.1 (4.4%)	25 (12.3%)

ALTERNATIVES 3 THROUGH 7

Impacts to Individuals

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following direct impacts to slender mariposa lilies cumulative occupied area and individuals (within both the permanent and temporary footprints) (**Figures 4.5-147** through **4.5-151,** Alternatives 3 through 7 Impacts to RMDP/SCP Special-Status Plants):

- Alternative 3 – permanent loss of 0.7 acre (0.3%) cumulative occupied area and 52 (0.08%) slender mariposa lilies;
- Alternative 4 – permanent loss of 0.7 acre (0.3%) cumulative occupied area and 52 (0.08%) slender mariposa lilies;
- Alternative 5 – permanent loss of 0.7 acre (0.3%) cumulative occupied area and 51 (0.08%) slender mariposa lilies;
- Alternative 6 – permanent loss of 0.2 acre (0.1%) cumulative occupied area and 21 (0.03%) slender mariposa lilies; and
- Alternative 7 – permanent loss of 0.3 acre (0.2%) cumulative occupied area and 16 (0.02%) slender mariposa lilies.

Compared to Alternative 2, which would result in the permanent direct loss of 0.7 acre (0.3%) cumulative occupied area and 52 (0.08%) slender mariposa lilies, the permanent loss of slender mariposa lilies under Alternatives 3 through 5 would not be substantially different due to changes in the Project footprint. The difference between Alternatives 6 and 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternatives 6 and 7, and other modifications to the Project footprint that would further decrease impacts to slender mariposa lily under Alternative 7. Because surveys were conducted within the Project development area for special-status plants from 2002 through 2005, there is a low probability that undocumented slender mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented slender mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different alternatives.

Because the direct permanent loss (Impacts to Individuals) of slender mariposa lily occurring as a result of implementation of the RMDP and the SCP under Alternatives 3

through 7 is not substantially different than loss under Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to individual slender mariposa lilies (**Figures 4.5-147** through **4.5-151,** Alternatives 3 through 7 Impacts to RMDP/SCP Special-Status Plants):

- Alternative 3 – permanent loss of 64 acres (31.5%) cumulative occupied area and 29,429 (44.5%) slender mariposa lilies;
- Alternative 4 – permanent loss of 61 acres (30.1%) cumulative occupied area and 28,926 (43.8%) slender mariposa lilies;
- Alternative 5 – permanent loss of 50 acres (24.6%) cumulative occupied area and 8,970 (13.6%) slender mariposa lilies;
- Alternative 6 – permanent loss of 49 acres (23.6%) cumulative occupied area and 28,521 (43.1%) slender mariposa lilies; and
- Alternative 7 – permanent loss of 54 acres (26.3%) cumulative occupied area and 8,798 (13.3%) slender mariposa lilies.

Compared to Alternative 2, which would result in the permanent loss of 71 acres (35.0%) cumulative occupied area and 30,593 (46.4%) slender mariposa lilies, Alternatives 3, 4, and 6 would not be substantially different. Alternatives 5 and 7 would have the least impact to individuals because there would be additional pullbacks from the Santa Clara River and its tributaries, increases in the footprints of the spineflower preserves, and other changes in the Project footprint, that would reduce impacts to slender mariposa lily. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7. Because surveys were conducted within the Project area for special-status plants from 2002 through 2005, there is a low probability that undocumented slender mariposa lily occurrences, consisting of relatively few plants, exist in other portions of the Project area, including areas to be disturbed by construction. The relative risk of impacts to undocumented slender mariposa lily would decrease proportionally with decreases in the size of the Project footprint under the different alternatives.

Because the indirect permanent loss (Impacts to Individuals) of slender mariposa lily occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 is not substantially different than

loss under Alternative 2, impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to individual slender mariposa lilies:

- Alternative 3 – permanent loss of 65 acres (31.5%) cumulative occupied area and 29,481 (44.6%) slender mariposa lilies;
- Alternative 4 – permanent loss of 62 acres (30.1%) cumulative occupied area and 28,978 (43.8%) slender mariposa lilies;
- Alternative 5 – permanent loss of 50 acres (24.6%) cumulative occupied area and 9,021 (13.3%) slender mariposa lilies;
- Alternative 6 – permanent loss of 49 acres (23.6%) cumulative occupied area and 28,546 (43.2%) slender mariposa lilies; and
- Alternative 7 – permanent loss of 54 acres (26.3%) cumulative occupied area and 8,814 (13.3%) slender mariposa lilies.

Compared to Alternative 2, which would result in the combined direct and indirect permanent loss of 72 acres (35.0%) cumulative occupied area and 30,645 (46.4%) slender mariposa lilies, Alternatives 3, 4, and 6 would not be substantially different, as described above for the discussions of direct and indirect impacts. The difference between Alternatives 5 and 7 and Alternative 2 impacts to individuals is primarily due to additional pullbacks from the Santa Clara River and its tributaries, increases in the footprints of the spineflower preserves, and other Project footprint reductions that would reduce impacts to slender mariposa lily under Alternative 7. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7. The combined direct and indirect permanent loss of individual slender mariposa lilies occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for

Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. For purposes of this analysis, it is assumed that the effects of the secondary impacts (and the potential for loss of slender mariposa lily) would be greatest within 300 feet of development. For Alternatives 3 through 7, slender mariposa lily cumulative occupied area and individuals within 300 feet of development include:

- Alternative 3 – 37 acres (18.0%) cumulative occupied area and 25,250 (38.2%) slender mariposa lilies;
- Alternative 4 – 36 acres (17.5%) cumulative occupied area and 25,064 (37.9%) slender mariposa lilies;
- Alternative 5 – 28 acres (13.6%) cumulative occupied area and 8,258 (12.5%) slender mariposa lilies;
- Alternative 6 – 30 acres (14.4%) cumulative occupied area and 24,157 (36.5%) slender mariposa lilies; and
- Alternative 7 – 25 acres (12.3%) cumulative occupied area and 10,351 (15.7%) slender mariposa lilies.

Compared to Alternative 2, which would result in 33 acres (16.3%) cumulative occupied area and 23,963 (36.3%) slender mariposa lilies within 300 feet of development, Alternatives 3, 4, and 6 would not be substantially different, as described above for the discussions of direct and indirect impacts. The difference between Alternatives 5 and 7 and Alternative 2 impacts to individuals is primarily due to additional pullbacks from the Santa Clara River and its tributaries, increases in the footprints of the spineflower preserves, and other Project footprint reductions that would reduce impacts to slender mariposa lily under Alternative 7. Additionally, no development would occur within the VCC planning area under Alternatives 4 through 7. The loss of or degradation of suitable habitat, the loss of individual slender mariposa lily, and periodic adverse impacts to their growth or reproductive success (*e.g.*, flower collecting) due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to slender mariposa lily: (1) impacts to individuals, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. The combined permanent loss of slender mariposa lilies individuals would range from 8,814 (13.3%) under Alternative 7 to 30,645 (46.4%) under Alternative 2. The combined permanent loss of these individuals would have a substantial adverse effect on this species and would substantially reduce the number and restrict the range of this species. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to individuals. A slender mariposa lily habitat replacement/enhancement program is outlined within the Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I), which describes how the applicant will successfully restore/enhance slender mariposa lily habitat and re-establish slender mariposa lily locations at appropriate receptor sites within the High Country SMA, Salt Creek area, and San Martinez Grande area where opportunities for long-term preservation are provided. While implementation of the proposed Project would result in impacts to a maximum of 72 acres of cumulative occupied area are within the development footprint, the mitigation and monitoring program mitigates impacts to slender mariposa lily cumulative occupied area at a ratio of 1:1 through successfully restoring/enhancing slender mariposa lily habitat and re-establishing slender mariposa lily locations in the High Country SMA, Salt Creek area, and other sites as appropriate. A minimum of 133 acres of slender mariposa lily cumulative occupied area will be conserved in the RMDP and SCP Project boundaries. These conserved acres include 73 acres of occupied habitat in the Salt Creek area, 30 acres in the High Country SMA, and at least 28 acres in the San Martinez Grande area.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts would be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term secondary impacts to slender mariposa lily, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; increased human activity, trampling, and soil compaction; and increased risk of fire would be minimized by restricting access to, grazing within, and recreational usage of the High Country SMA; providing for transition areas along the High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan; placing restrictions on domestic animals in proximity to open space areas; by providing trail signage and homeowner education; and placing restrictions on plant palettes proposed for use on landscaped slopes.

All specific mitigation measures for slender mariposa lily are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-182 IMPACTS TO INDIVIDUALS – SLENDER MARIPOSA LILY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, or mitigate the loss of slender mariposa lily.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where slender mariposa lily occurs. Transition from the development edge to the natural area (where slender mariposa lily occurs) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA, which supports 30 acres of slender mariposa lily cumulative occupied area.

SP-4.6-53 and SP-4.6-59 state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

Measures Recommended by EIS/EIR

This EIS/EIR recommends two mitigation measures to reduce the loss of and/or harm to slender mariposa lily.

BIO-25 describes restoration of disturbed portions of the spineflower preserves through revegetation with native plant communities. Areas that have greater than 30% absolute cover by weeds will be restored to have at least 70% absolute cover by native species. Cal-IPC List A and B plants that are present within the spineflower preserves will be controlled. Those slender mariposa lily occurrences located within spineflower preserves would benefit from this restoration measure.

BIO-40 requires implementation of the Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I), subject to agency approval. The Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I) shall be revised and submitted to CDFG for review and approval prior to ground disturbance to occupied habitat. Upon approval, the plan will be implemented by the applicant or its designee. The revised plan will demonstrate the feasibility of enhancing or restoring slender mariposa lily habitat in selected areas to be managed as natural open space (*i.e.*, High Country SMA, Salt Creek area, spineflower preserves, or River Corridor SMA) without conflicting with other resource management objectives. Habitat replacement/enhancement will be at a ratio of 1:1 (acres restored/enhanced to acres impacted).

Approximately 103 acres of slender mariposa lily cumulative occupied area will be conserved and managed in the RMDP Project boundary, specifically within the High County SMA and Salt Creek. Additional cumulative occupied area will be conserved and managed in San Martinez Grande Canyon at a 1:1 ratio (acres conserved/managed to acres impacted) based on impacts to cumulative occupied area within the Entrada planning area, as a means to ensure regional biodiversity of the species. Up to an additional 28 acres of slender mariposa lily cumulative occupied area can be conserved and managed in the San Martinez Grande Canyon area for this purpose.

Finding of Significance for Impacts to Individuals After Mitigation

After mitigation, impacts associated with the loss of slender mariposa lily would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-183 SECONDARY IMPACTS – SLENDER MARIPOSA LILY

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate for secondary impacts to slender mariposa lily.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-32, SP-4.6-34, and SP-4.6-35:

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA, and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading would be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where slender mariposa lily occurs. Transition from the development edge to the natural area (where slender mariposa lily occurs) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-33, which permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where slender mariposa lily occurs. Transition from the development edge to the natural area (where slender mariposa lily occurs) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or

off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary where slender mariposa lily occurs. Transition from the development edge to the natural area (where slender mariposa lily occurs) shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages (which are in proximity to slender mariposa lily occurrences), and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs (which contain slender mariposa lily occurrences) to fire hazards.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country

SMA and Salt Creek area in a natural state. These measures include SP-4.6-27, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, and SP-4.6-55 and SP-4.6-58:

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB. This will benefit slender mariposa lily occurrences located in proximity to drainages.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading, this EIS/EIR identifies Mitigation Measure BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading;

and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-52, BIO-70, and BIO-71:

BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005) and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution would be further mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-69, which requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, this EIS/EIR identifies Mitigation Measures BIO-49 and BIO-52:

BIO-49 prohibits requires that pollutants from construction activities not be allowed to enter a flowing stream or be placed in locations that may be subjected to storm flows. This will benefit slender mariposa lily occurrences located in proximity to drainages.

BIO-52, which states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to avoid and minimize impacts from increased fire frequency, this EIS/EIR identifies Mitigation Measure BIO-63, which requires each HOA to supply educational information to future residents regarding pets, wildlife, and open space areas specifying that pets must remain leashed while on designated trail systems and/or in any areas within or adjacent to open space. This measure also requires as-needed control of stray and feral cats and dogs in open space areas.

Each potential secondary impact would be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the High Country SMA and Salt Creek area in a natural state. These measures include BIO-19, BIO-20, BIO-21, BIO-40, and BIO-69:

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA, both of which support slender mariposa lily occurrences. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-20 states that approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The

functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated.

BIO-21 requires coastal sage scrub restoration in the event that the functional value of burned habitat preserved under BIO-20 has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events.

BIO-40 requires implementation of the Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I), subject to agency approval. The Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I) shall be revised and submitted to CDFG for review and approval prior to ground disturbance to occupied habitat. Upon approval, the plan will be implemented by the applicant or its designee. The revised plan will demonstrate the feasibility of enhancing or restoring slender mariposa lily habitat in selected areas to be managed as natural open space (*i.e.*, High Country SMA, Salt Creek area, spineflower preserves, or River Corridor SMA) without conflicting with other resource management objectives. Habitat replacement/enhancement will be at a ratio of 1:1 (acres restored/enhanced to acres impacted). A minimum of 133 acres of slender mariposa lily cumulative occupied area will be conserved in the RMDP and SCP Project boundaries. At least 28 of the 133 acres will be conserved in the San Martinez Grande Canyon area

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to slender mariposa lily would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTHERN CALIFORNIA BLACK WALNUT (CNPS LIST 4.2/S3.2)

Life History

Southern California black walnut (*Juglans californica* var. *californica*) is a low-growing deciduous hardwood tree or large shrub endemic to southern California. Southern California black walnut is known to occur within Los Angeles, Santa Barbara, Ventura, Orange, Riverside, San Bernardino, and San Diego counties (CNPS 2007). Swanson (1976) also notes the occurrence of this species within San Luis Obispo County, inland of Cambria. Within Orange County, this species is known to occur along the Santa Ana River and, within San Bernardino County, it occurs as far east as Yucaipa (Swanson 1976). Although southern California black walnut is fairly widespread, extant walnut-dominated woodlands and forests are limited to the Santa Clarita River drainage in the vicinity of Sulphur Mountain as well as small stands in the Simi Hills and Santa Susana Mountains, the north slope of the Santa Monica Mountains, the San Jose Hills, Puente Hills, and Chino Hills (Griffin and Critchfield 1972; Quinn 1989).

Southern California black walnut is found primarily on dry south- and west-facing slopes and within canyons at elevations between 50 and 900 meters AMSL (CNPS 2007; Hickman 1993; Dole and Rose 1996). It grows to 15 meters height. Mature trees may have a single trunk, or may be multiple-stemmed from the base, due to post-fire resprouting (Quinn 1989). It inhabits chaparral and cismontane woodlands with Miocene–Pliocene shale and coastal scrub with alluvial soils (NatureServe 2007; CNPS 2007). Southern California black walnut can tolerate high salinity and alkalinity along streams (Mullally 1992). It generally blooms from March to August and produces seed during fall (CNPS 2007). *Juglans* species are wind-pollinated (Bai *et al.* 2006). Seedlings mature rapidly in moist, sunny conditions. Mature walnut fruits are actively sought and subsequently stored, buried, or eaten by small rodents, including California ground squirrels (*Spermophilus beecheyi*) and western gray squirrels (*Sciurus griseus*) (Quinn 1989; Takahashi *et al.* 2007).

In addition to the direct loss of individuals, southern California black walnut is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the southern California black walnut. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Occurrences of this species throughout the RMDP and SCP area have been observed in a variety of vegetation communities, sometimes as the dominant species of California walnut woodland, and sometimes as an uncommon component of undifferentiated chaparral, coastal scrub alliances and associations, and alluvial scrub, oak woodland (coast live oak woodland, mixed oak woodland and forest, valley oak woodland), and southern cottonwood–willow riparian forest.

Focused surveys for special-status plant species were conducted in spring and summer 2002 through 2005, coincident with the annual blooming period for southern California black walnut, which blooms from March through August (CNPS 2007). Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, consequently, the number of other documented special-status species observed; this could be an explanation for why southern California black walnut was not recorded within the Specific Plan, VCC, and Entrada planning areas in 2006 and 2007.

Given the low sensitivity status of the species (CNPS List 4.2), the exact locations of all individual southern California black walnut trees within the Project area have not been mapped. However, a total of 27 acres of California walnut woodland is present in the Project area in the High Country SMA and Salt Creek area (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers). Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals.

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and construction of permitted facilities would not result in any direct permanent or temporary impacts to the 27 acres of California walnut woodland on site. Individual southern California black walnut trees are uncommon in other vegetation communities, but implementation of the RMDP is expected to result in the

removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland. Pre-construction surveys will identify any additional individual southern California black walnut trees within other vegetation communities that will be impacted within the RMDP development area. No individuals would be directly lost by implementation of the SCP. Implementation of the RMDP and the SCP would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles and considered threatened by CDFG (S3.2) (significance criterion 1). Direct impacts (Loss of Habitat) would be significant, absent mitigation.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would not result in any indirect permanent impacts to the 27 acres of California walnut woodland on site. Individual southern California black walnut trees are uncommon in other vegetation communities, but build-out of the Specific Plan, VCC, and Entrada planning areas is expected to result in the removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland. Pre-construction surveys will identify any additional individual southern California black walnut trees within other vegetation communities that will be impacted within the Specific Plan, VCC, and Entrada planning areas. Such an impact would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles and considered threatened by CDFG (S3.2) (significance criterion 1). Indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent and Temporary Impacts

Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in impacts to California walnut woodland on site. Individual southern California black walnut trees are uncommon in other vegetation communities, but implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas is expected to result in the removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland. Pre-construction surveys will identify any additional individual southern California black walnut trees within other vegetation communities that will be impacted within the RMDP and SCP areas, and the Specific Plan, VCC, and Entrada planning areas. The combined direct and indirect loss of southern California black walnut individuals that exist in vegetation communities other than California walnut woodland would be considered a substantial adverse effect on a species designated as special-status by the County of Los Angeles and considered

threatened by CDFG (S3.2) (significance criterion 1). The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include short-term impacts such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; hydrologic alterations and water quality impacts; and long-term impacts such as the introduction of non-native, invasive plant species; increased human activity, trampling, and soil compaction; and increased risk of fire. Southern California walnut individuals are uncommonly distributed in several vegetation communities on site, some of which are in proximity to proposed development areas; therefore, short-term and long-term secondary impacts are expected to occur to this species. California walnut woodland occurs in proximity to recreational trails in the High Country SMA and Salt Creek area.

The potential loss of southern California black walnut and the effect on its habitat as a result of these secondary impacts would constitute a substantial adverse effect on a species designated as special-status by the County of Los Angeles and considered threatened by CDFG (S3.2) (significance criterion 1). Secondary impacts (Loss of Habitat) would be significant, absent mitigation.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts and Indirect Permanent Impacts

The potential for direct permanent and temporary and indirect permanent loss of habitat for southern California black walnut as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be similar to loss under Alternative 2. The 27 acres of California walnut woodland known to occur within the High Country SMA portion of the RMDP and SCP site would not be impacted under Alternatives 3 through 7. Individual southern California black walnut trees are uncommon in other vegetation communities, but implementation of the RMDP and the SCP is expected to result in the removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland. Pre-construction surveys will identify any additional individual southern California black walnut trees within other vegetation communities that will be impacted within the RMDP development area. Such an impact would have a substantial adverse effect on a species designated as special-

status by the County of Los Angeles and considered threatened by CDFG (S3.2). Direct permanent and temporary and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

Implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would not result in impacts to California walnut woodland on site under Alternatives 3 through 7. Individual southern California black walnut trees are uncommon in other vegetation communities, but implementation of the RMDP and SCP and build-out of the Specific Plan, VCC, and Entrada planning areas is expected to result in the removal of occasional individual southern California black walnut trees that exist in vegetation communities other than California walnut woodland. Pre-construction surveys will identify any additional individual southern California black walnut trees within other vegetation communities that will be impacted within the Specific Plan, VCC, and Entrada planning areas. The combined direct and indirect permanent loss of southern California black walnut individuals that exist in vegetation communities other than California walnut woodland would be considered a substantial adverse effect on a species designated as special-status by the County of Los Angeles and considered threatened by CDFG (S3.2). The combined direct and indirect permanent impacts (Loss of Habitat) under Alternatives 3 through 7 would be significant, absent mitigation.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. Southern California walnut individuals are uncommonly distributed in several vegetation communities on site, some of which are in proximity to proposed development areas; therefore, short-term and long-term secondary impacts are expected to occur to this species. California walnut woodland occurs in proximity to recreational trails in the High Country SMA and Salt Creek area. The loss of or degradation of suitable habitat and the loss of individual southern California black walnut (designated as special-status by the County of Los Angeles and considered threatened by CDFG (S3.2)) due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be significant, absent mitigation.

Mitigation Strategy and Summary

The Project would result in two types of significant impacts to southern California black walnut: (1) loss of suitable habitat, and (2) secondary impacts to individuals and suitable habitat outside the Project footprint.

Impacts to habitat and associated individuals could occur during construction as a result of vegetation clearing and grading, including injury and mortality due to direct contact with construction equipment. Although the proposed project would not result in the loss of suitable habitat for the southern California black walnut, it is anticipated that the proposed project would result in impacts to small pockets of southern California black walnut as these occur as occasional components of other vegetation communities. The combined permanent loss of suitable habitat and associated individuals would have a substantial adverse effect on a species designated as special-status by the County of Los Angeles. The applicant will implement several mitigation measures to avoid, minimize, and mitigate impacts to habitat and associated individuals. Pre-construction surveys for southern California black walnut will be conducted and southern California black walnut trees will be replaced in conformance with the oak tree ordinance (*e.g.*, County of Los Angeles 1988) in effect at that time, and southern California black walnut trees or shrubs outside riparian areas greater than one inch dbh shall be replaced at a ratio of at least 2:1. The proposed mitigation, through guidelines supplied by the Oak Resources Management Plan and through the preservation and long-term management of the High Country SMA, River Corridor SMA, Salt Creek area, and Open Area, provides mitigation for the loss of tree resources in a manner that emphasizes: (1) restoring the natural regeneration capabilities of preserved woodlands in order to restore and improve forest diversity and value on a long-term basis and (2) creating new woodlands in areas that supported southern California black walnut prior to development and in areas that will enhance wildlife movement and habitat functions. In addition, where southern California black walnut trees occur within riparian areas, the Project applicant will implement a series of mitigation measures designed to replace, restore, enhance, and maintain natural riparian communities in the Santa Clara River or its tributaries; and create new riparian communities in areas that currently support degraded or exotic vegetation. Mitigation designed to restore, enhance, or replace temporarily disturbed riparian vegetation communities focuses on achieving the required percent coverage and tree growth performance criteria for the proposed target species, as well as native species recruitment and reproduction. Mitigation measures will provide for the long-term maintenance of the River Corridor SMA, High Country SMA, and Open Area in a natural state by restricting access to and prohibiting grazing, agriculture, and recreation within these areas; providing for the restoration and enhancement of habitat within these areas; and through the open space dedication of these areas. General procedures to avoid and minimize impacts to southern California black walnut habitat and associated individuals during construction will be implemented, and a qualified biologist will be present during construction in order to avoid inadvertent impacts to biological resources outside of the grading area, further reducing impacts to the species.

Short-term secondary impacts, such as accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; and hydrologic alterations and water quality impacts will be minimized by providing guidelines for grading and construction activities; by retaining a qualified biologist during all grading and construction activities; by providing erosion control plans, dust control, and an overall Project SWPPP; by preventing pollutants from entering flowing streams and storm flows; by providing guidelines for stream diversion; and by requiring that the Specific Plan conform to all provisions of required NPDES permits and water quality permits required by the RWQCB. Long-term, secondary impacts to southern California black walnut, such as the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction, will be minimized by additional measures restricting access to, grazing within, and recreational usage of the River Corridor SMA and High Country SMA; providing for transition areas along the River Corridor SMA and High Country SMA; providing drainage guidelines; requiring conformance with NPDES and RWQCB permit provisions; requiring the implementation of a wildfire fuel modification plan (Dudek 2008A); placing restrictions on domestic animals in proximity to open space areas; providing trail signage and homeowner education; placing restrictions on plant palettes proposed for use on landscaped slopes; and providing revegetation plans for the River Corridor SMA.

All specific mitigation measures for southern California black walnut are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-184 LOSS OF HABITAT – SOUTHERN CALIFORNIA BLACK WALNUT

Significant for Alternatives 2, 3, 4, 5, 6, and 7.

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to avoid, minimize, and/or mitigate the loss of or southern California black walnut trees.

To mitigate for the removal of individuals during construction, SP-4.6-48 lists standards for the restoration and enhancement of oak resources and applies these standards to southern California black walnut, within the High Country SMA and Open Area, including: replacement oaks shall be planted in conformance with the current oak tree ordinance, oaks planted shall be of local genetic stock, a resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

In addition to mitigation measures requiring replacement of individual trees, southern California black walnut is associated with jurisdictional areas along the Santa Clara River and its tributaries

and, where this species occurs in jurisdictional areas, the following mitigation measures will apply.

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester. SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub. SP-4.6-44 requires drainages with flows over 2,000 cfs in the Open Area to have soft bottoms. Bank protection will be ungrouted rock or buried bank stabilization except where other stabilization is required for public safety. SP-4.6-45 requires establishment of the alignments and widths of major drainages in the Open Area through drainage studies to be approved by the County at the time of subdivision map approval.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In addition to the restoration and avoidance mitigation measures described above, southern California black walnut will benefit from the following preservation and management mitigation measures.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities

for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to reduce the loss of and/or harm to southern California black walnut trees.

In addition to mitigation measures described above requiring replacement of individual trees, southern California black walnut is associated with jurisdictional areas along the Santa Clara River and its tributaries and, where this species occurs in jurisdictional areas, the following mitigation measures will apply.

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A), and areas identified as being suitable for oak resources (including southern California black walnut) enhancement and creation shall be used for mitigation.

BIO-88 states that any southern California black walnut or mainland cherry trees or shrubs outside riparian areas greater than one inch dbh shall be replaced at a ratio of at least 2:1, using a minimum 15-gallon size specimen that measures at least one inch in diameter one foot above the base.

In addition to the restoration and avoidance mitigation measures described above, southern California black walnut will benefit from the following preservation and management mitigation measures. BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

Finding of Significance for Loss of Habitat After Mitigation

After mitigation, impacts associated with the loss of southern California black walnut trees would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-185 SECONDARY IMPACTS – SOUTHERN CALIFORNIA BLACK WALNUT

Previously Incorporated Measures

The Newhall Ranch Specific Plan Program EIR identified the following mitigation measures to mitigate secondary impacts to southern California black walnut trees.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-20, SP-4.6-32, and SP-4.6-34 and SP-4.6-35:

SP-4.6-20 states that any grading activities within or adjacent to the River Corridor SMA shall have grading perimeters clearly marked and inspected prior to grading. The Project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources**.**

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-34 and SP-4.6-35 establish that grading perimeters shall be clearly marked and inspected by the Project biologist prior to impacts occurring within or adjacent to the High Country SMA and that the biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

Secondary impacts associated with accidental clearing, trampling, and grading will be further mitigated by implementation of Mitigation Measure SP-4.6-33, which permits construction of

buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

In order to avoid and minimize impacts from hydrologic and water quality-related impacts adjacent to and downstream of construction activities, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-44 and SP-4.6-45, which provide guidelines for major drainages, and SP-4.6-58, which requires conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-7, SP-4.6-19, SP-4.6-26a, SP-4.6-33, and SP-4.6-43:

SP-4.6-7 requires that revegetation plans for the River Corridor SMA include guidelines for the maintenance of the mitigation site during the establishment of plantings, control of non-native plants, maintenance of the irrigation system, and replacement of plants, if necessary.

SP-4.6-19 requires that transition areas be in areas where there is no steep grade separation; that native riparian plants be incorporated into landscaping where feasible; that roads and bridges be designed to discourage access to River Corridor SMA; that bank stabilization be composed of ungrouted rock; and that a minimum 100-foot-wide buffer be provided between top river-side of bank stabilization and development.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

In order to avoid and minimize impacts from increased human activity and trampling, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measure SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-24, SP-4.6-29 through SP-4.6-32, SP-4.6-33, and SP-4.6-39:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-24 states that the River Corridor SMA conservation and public access easement shall prohibit grazing and agriculture and shall restrict recreational use to the established trail system.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-39 states that the High Country SMA easements shall prohibit grazing within the High Country SMA, except for long-term resource management programs, and shall restrict recreation to the established trail system.

In order to avoid and minimize impacts from increased fire frequency, the Newhall Ranch Specific Plan Program EIR identified Mitigation Measures SP-4.6-17, SP-4.6-31, SP-4.6-32, SP-4.6-33, and SP-4.6-49 through SP-4.6-52:

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-31 prohibits hunting, fishing, and motor or off-trail bike riding within the High Country SMA.

SP-4.6-32 states that the trail system shall be designed and constructed to minimize impacts to native habitats within the High Country SMA.

SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

Each potential secondary impact will be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include SP-4.6-1 through SP-4.6-16 and SP-4.6-63, SP-4.6-17, SP-4.6-18 and SP-4.6-19, SP-4.6-21 through SP-4.6-26, SP-4.6-26a, SP-4.6-27, SP-4.6-28, SP-4.6-29 through SP-4.6-32, SP-4.6-33, SP-4.6-36 through SP-4.6-42, SP-4.6-43, SP-4.6-46 and SP-4.6-47, SP-4.6-47a, SP-4.6-48, SP-4.6-49 through SP-4.6-52, and SP-4.6-55 and SP-4.6-58:

SP-4.6-1 through SP-4.6-16 and SP-4.6-63 provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc.*) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

SP-4.6-17 states that hiking and biking within the River Corridor SMA shall be limited to the River trail system. Trail access shall be limited to daytime use. No hunting, fishing, motor or off-trail bike riding, or pets shall be allowed. The trail system shall be designed to minimize impacts to native habitats.

SP-4.6-18 and SP-4.6-19 describe design requirements for transition areas between the River Corridor SMA and development to lessen the impact of the development on the conserved area. Transition areas may be composed of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Transition areas shall be located where there is no steep grade separation, native riparian plants shall be incorporated into landscaping where

feasible, roads and bridges shall be designed to discourage public access to the River Corridor SMA, and a minimum 100-foot-wide buffer shall be provided between top river-side bank stabilization and development.

SP-4.6-21 through SP-4.6-26 describe the open space dedication of the River Corridor SMA, as well as guidelines for ownership, management, public access, and grazing within the River Corridor SMA.

SP-4.6-26a identifies riparian revegetation and oak tree replacement opportunities in the High Country SMA and specifies mitigation requirements for each.

SP-4.6-27 requires removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions set forth for enhancement in the River Corridor SMA.

SP-4.6-28 states that mitigation banking for riparian habitats in the High Country SMA is subject to state and federal regulations and permits, mitigation for oak resources is subject to the Oak Resources Management Plan, and mitigation banking for Mexican elderberry scrub is subject to the approval of the County Forester.

SP-4.6-29 through SP-4.6-32 limit access to daytime use of the designated trail system; prohibit pets (with the exception of horses on established trails); prohibit hunting, fishing, and motor or off-trail bike riding; and provide trail design guidelines to minimize impacts to native habitats within the High Country SMA. SP-4.6-33 permits construction of buildings and other structures only upon developed pads within certain Planning Areas and not on southerly slopes facing the High Country SMA or in the area between the original SEA 20 boundary and the High Country SMA boundary. Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones (FMZs) as set forth in Mitigation Measure SP-4.6-49.

SP-4.6-36 through SP-4.6-42 describe the open space dedication of the High Country SMA, as well as guidelines for ownership, management, public access, and grazing within the High Country SMA.

SP-4.6-43 allows for the use of Open Area for mitigation of riparian or oak resources or elderberry scrub.

SP-4.6-46 and SP-4.6-47 describe the dedication of the Open Area and provide acceptable usage guidelines.

SP-4.6-47a permits mitigation banking within the River Corridor SMA, High Country SMA, and Open Area, subject to requirements for riparian habitats, oak resources, and Mexican elderberry scrub.

SP-4.6-48 lists standards for the restoration and enhancement of oak resources (including southern California black walnut) within the High Country SMA and Open Area, including: replacement trees shall be planted in conformance with the current oak tree ordinance, trees planted shall be of local genetic stock, an oak resource replacement plan shall be prepared prior to restoration, and all plans and specifications shall follow County oak tree guidelines.

SP-4.6-49 through SP-4.6-52 describe wildfire fuel modification plans and fuel modification measures that will minimize the potential exposure of the development areas, Open Area, and SMAs to fire hazards.

SP-4.6-55 and SP-4.6-58 require obtaining all pertinent state and federal permits prior to impacts to wetlands or other sensitive habitats as well as requiring conformance with all provisions of required NPDES permits and water quality permits required by the RWQCB.

Measures Recommended by EIS/EIR

This EIS/EIR recommends the following mitigation measures to mitigate short-term and long-term secondary impacts to a level that is adverse but not significant.

In order to avoid and minimize impacts from accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; and exposure to fugitive dust; as well as from hydrologic alterations and water quality impacts, this EIS/EIR identifies Mitigation Measures BIO-45 and BIO-52:

BIO-45 states that when work in a flowing stream is unavoidable, the entire stream flow shall be diverted around the work area by a means approved by CDFG. A temporary diversion channel shall be constructed using the least damaging method possible. The stream channel alignment shall be restored after construction, in consultation with CDFG.

BIO-52 states that prior to grading and construction activities, a qualified biologist shall attend the pre-construction meeting to ensure timing/location of construction activities do not conflict with other mitigation requirements; conduct meetings with contractor describing the importance of restricting work to the restricted areas; discuss procedures for minimizing harm to or harassment of wildlife; review the construction area in the field with the contractor in accordance with the final grading plan; conduct a final field review of staking; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

In order to further avoid and minimize impacts from dust, runoff, sedimentation, erosion, and chemical and toxic compound pollution, this EIS/EIR identifies Mitigation Measures BIO-70 and BIO-71:

BIO-70 specifies necessary design features and construction notes for construction plans to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction as well as BMPs for inclusion in the Project SWPPP to avoid impacting special-status species during construction.

BIO-71 requires dust control measures for development areas to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control plans shall comply with SCAQMD Rule 403 (SCAQMD 2005), and chemical dust suppression shall not be utilized within 100 feet of known special-status plant communities.

Short-term secondary impacts associated with runoff, sedimentation, erosion, and chemical and toxic compound pollution and with hydrological alterations and water quality impacts will also be mitigated by implementation of Mitigation Measure BIO-49, which prohibits water containing mud, silt, or other pollutants from entering a flowing stream or being placed in locations subject to normal storm flows.

In order to avoid and minimize impacts from the introduction of non-native, invasive plant species, this EIS/EIR identifies Mitigation Measure BIO-72, which specifies that plant palettes proposed for use within 100 feet of native vegetation communities shall be reviewed to ensure that the proposed plants will not naturalize and require maintenance or cause vegetation community degradation. Container plants for use within 100 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 100 feet of native vegetation communities. Plant palettes shall include non-invasive species that do not require high irrigation rates. Except as required for fuel modification, perimeter landscaping irrigation shall be temporary.

In order to avoid and minimize impacts from increased human activity and trampling, this EIS/EIR identifies Mitigation Measure BIO-69 and BIO-73:

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Each potential secondary impact will be addressed through the implementation of a series of mitigation measures designed to provide for the long-term maintenance of the River Corridor SMA, the High Country SMA, and Open Area in a natural state. These measures include BIO-1 through BIO-16, BIO-19, BIO-22, BIO-62, BIO-69, and BIO-73:

BIO-1 through BIO-16 include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees, exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

BIO-19 states that the 1,518-acre Salt Creek area shall be offered for dedication to the public and managed in conjunction with the 4,205-acre High Country SMA. The existing agricultural undercrossing at SR-126 shall be enhanced to facilitate wildlife movement connecting Salt Creek Canyon to agricultural land north of SR-126.

BIO-22 states that the Oak Resource Management Plan shall incorporate the findings of the Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007A), and areas identified as being suitable for oak woodland enhancement and creation shall be used for mitigation.

BIO-62 states that at least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO. These 1,900 acres of the Open Area will be left as natural vegetation.

BIO-69 requires the Project applicant to develop and implement a conservation education and citizen awareness program for the High Country SMA and install signage to keep people and their animals on existing trails.

BIO-73 requires permanent fencing along all trails that pass through the River Corridor SMA to minimize impacts to protected vegetation communities and special-status plant and wildlife species due to increased human presence.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to southern California black walnut trees would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

SOUTHWESTERN SPINY RUSH (CNPS LIST 4.2/S3.2)

Life History

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) is a large herbaceous perennial with long, rigid, cylindrical grass-like leaves with sharp tips (spines) that grows in moist saline areas and blooms from May through June (CNPS 2007). This stout, robust species occurs in San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego counties, extending southward into Baja California and perhaps also east into Imperial County and Arizona as well (CNPS 2007). This species is considered locally and regionally rare by local botanists and has been documented from 10 vouchered collections from Los Angeles County, half of which are on Santa Catalina Island (Magney and Hoskinson 2007). This species was observed in 2006 in Violin Canyon adjacent to the Angeles National Forest and Interstate-5 (I-5), south of Templin Highway and Paradise Ranch, eight miles north of Castaic, in Los Angeles County. Southwestern spiny rush was observed in 2007 near the western bank of Castaic Creek above the Castaic power plant. This species was observed in 2005 and 2006 in Piru Creek (below Frenchman's flat) and Oso Creek (Huntley 2009). Southwestern spiny rush was observed along Castaic Creek upstream of the confluence of Castaic Creek and Fish Creek, and this species is locally common in Grasshopper Canyon (Boyd 1999).

Southwestern spiny rush generally occurs at elevations lower than 900 meters AMSL (Hickman 1993). Near the coast, it is found primarily in mesic sites of coastal dune systems and coastal salt marshes. Farther inland, it occurs in meadows, alkaline seeps, marshes, and sometimes along stream channels (CNPS 2007; Hickman 1993; Reiser 1994; Boyd 1999).

In addition to the direct loss of individuals, southwestern spiny rush is vulnerable to several effects related to urbanization. Non-native plant species, which compete for light, water, and nutrients, have been found to invade native vegetation communities and become established after repeated burnings, changes in surface and subsurface hydrologic conditions (changes in irrigation and runoff), use of chemical pollutants, clearing of vegetation, trampling, or following periods of drought and overgrazing, all of which are possible side effects of nearby human habitation. The successful invasion of exotic plant species may alter habitats and displace native species over time, leading to extirpation of natives such as the southwestern spiny rush. Exotic plants can also alter hydrologic and biochemical cycles, alter seed bank characteristics, disrupt natural fire regimes, and alter soil fertility within and adjacent to urban development.

Survey Results

Southwestern spiny rush was observed on site along secondary channels and low terraces along the Santa Clara River.

The focused surveys conducted in spring and summer 2001 through 2006 were coincident with the annual blooming period for southwestern spiny rush, which blooms from May through June

(CNPS 2007). The surveys typically began in April and extended through August. Surveys in 2006 and 2007 focused on the identification of San Fernando Valley spineflower only within known occurrences, reducing the total survey area and, consequently, the likelihood of detection of other documented special-status species. This species has definitive habitat requirements and the surveys focused on suitable habitat. In addition, this is a large, spiny plant and was observed during the non-blooming period and the blooming period.

Observations of southwestern spiny rush were made on site within the River Corridor SMA in 2001, 2003, 2004, 2005, and 2006 (Dudek and Associates 2004C, 2004F, 2006F, 2006I; FL*x* 2002A, 2004A). Given the status of the species (CNPS List 4.2), the exact locations of individuals of this species within the Project area have not been mapped. Therefore, impacts to this species were evaluated by loss of habitat instead of impacts to individuals. A total of 187 acres of suitable habitat (bulrush–cattail wetland, coastal and valley freshwater marsh, and herbaceous wetland) is present in the Project area. (**Figures 4.5-11-A1** through **4.5-11-C2**, RMDP/SCP – Vegetation Communities and Land Covers, **Figure 4.5-20**, VCC SCP Site – Vegetation Communities and Land Covers, and **Figure 4.5-21**, Entrada RMDP/SCP Site – Vegetation Communities and Land Covers).

Impacts

ALTERNATIVE 1 (No Action/No Project)

Under Alternative 1, the proposed RMDP and SCP would not be approved and implemented and the previously approved Specific Plan and VCC developments and the planned development of Entrada would not go forward. There would be no foreseeable change in existing land use practices. Oil and gas production, grazing, and agricultural operations would continue under Alternative 1. Please see **Subsection 4.5.5.2.2** for detailed analysis.

ALTERNATIVE 2

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP would result in the direct permanent loss of 2.8 acres (1.5%) and the temporary loss of 4.3 acres of suitable habitat on site (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). No individuals would be directly lost by implementation of the SCP. Because of the relatively small permanent and temporary direct loss of suitable habitat and its relatively broad distribution in the Project region, the direct loss of southwestern spiny rush plants occupying this habitat as a result of construction/grading activities would not be considered a substantial adverse effect on this species and would not

substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Direct impacts (Loss of Habitat) would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC, and Entrada planning areas would result in the indirect permanent loss of approximately 1.1 acres (0.6%) of suitable habitat on site (**Figures 4.5-33-A1** through **4.5-33-D2**, Alternative 2 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). It is likely that individual southwestern spiny rush plants associated with these vegetation communities would be lost as a result of build-out of these planning areas. Because of the minimal amount of suitable habitat that would be affected and its relatively broad distribution in the Project region, this loss would not be considered a substantial adverse effect on this species and would not substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent loss of suitable habitat resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would total 3.8 acres (2.1%). Because of the minimal amount of suitable habitat that would be affected and its relatively broad distribution in the Project region, the combined direct and indirect permanent impacts to southwestern spiny rush individuals and its habitat would not have a substantial adverse effect on this species and would not substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). The combined direct and indirect permanent impacts (Loss of Habitat) would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts associated with implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas include accidental clearing, trampling, and grading; runoff, sedimentation, erosion, and chemical and toxic compound pollution; exposure to fugitive dust; the introduction of non-native, invasive plant species; hydrologic alterations and water quality impacts; and increased human activity, trampling, and soil compaction. Because of this species' relatively broad distribution in the Project region, the potential loss of southwestern spiny rush and the effect on its habitat resulting from these secondary impacts would not constitute a substantial adverse effect on this species and would not substantially reduce the number or restrict the range of the species (significance criteria 1 and 7). Secondary impacts would be adverse but not significant.

ALTERNATIVES 3 THROUGH 7

Loss of Habitat

Direct Permanent and Temporary Impacts

Implementation of the RMDP and the SCP would result in the following permanent and temporary direct impacts to suitable habitat for southwestern spiny rush:

- Alternative 3 – 1.8 acres (1.0%) of permanent loss and 4.4 acres of temporary loss;
- Alternative 4 – 1.9 acres (1.0%) of permanent loss and 4.3 acres of temporary loss;
- Alternative 5 – 2.3 acres (1.2%) of permanent loss and 5.2 acres of temporary loss;
- Alternative 6 – 2.0 acres (1.0%) of permanent loss and 4.1 acres of temporary loss; and
- Alternative 7 – 0.5 acres (0.3%) of permanent loss and 3.3 acres of temporary loss.

Compared to Alternative 2, which would result in 2.8 acres (1.5%) of permanent loss and 4.3 acres of temporary loss, the permanent and temporary loss of habitat under Alternatives 3 through 6 would not be substantially different (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). The difference between Alternative 7 and Alternative 2 impacts is primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries under Alternative 7, which would result in fewer permanent impacts and greater temporary impacts under that alternative.

Because the overall loss of habitat from implementation of the RMDP and the SCP under Alternatives 3 through 7 is not substantially different than overall habitat loss under Alternative 2, impacts for Alternatives 3 through 7 would be adverse but not significant.

Indirect Permanent Impacts

Build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following indirect permanent impacts to suitable habitat for southwestern spiny rush:

- Alternative 3 – 0.6 acre (0.3%) of permanent loss;
- Alternative 4 – 0.2 acre (0.1%) of permanent loss;

- Alternative 5 – 0.0 acre (0.0%) of permanent loss;
- Alternative 6 – 0.0 acre (0.0%) of permanent loss; and
- Alternative 7 – 0.0 acre (0.0%) of permanent loss.

Compared to Alternative 2, which would result in 1.1 acres (0.6%) of permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts (**Figures 4.5-34-A1** through **4.5-38-D2**, Alternatives 3 through 7 Impacts to RMDP/SCP, VCC, and Entrada Vegetation Communities). Alternative 4 would impact a reduced impact compared to Alternative 3 because VCC would not be constructed. Alternatives 5 through 7 would have the least impact because VCC would not be constructed and there would be additional pullbacks from the Santa Clara River and its tributaries, and other changes in the Project footprint that would reduce impacts to southwestern spiny rush compared to other alternatives.

Although Alternatives 3 through 7 would have reduced impacts compared to Alternative 2, these impacts would still be substantially adverse because of the habitat loss on site. The indirect permanent loss of suitable habitat for southwestern spiny rush occurring as a result of build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect permanent impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas would result in the following impacts to suitable habitat for southwestern spiny rush:

- Alternative 3 – 2.5 acres (1.3%) of permanent loss;
- Alternative 4 – 2.0 acres (1.1%) of permanent loss;
- Alternative 5 – 2.3 acres (1.2%) of permanent loss;
- Alternative 6 – 2.0 acres (1.0%) of permanent loss; and
- Alternative 7 – 0.5 acre (0.3%) of permanent loss.

Compared to Alternative 2, which would result in 3.8 acres (2.1%) of combined direct and indirect permanent loss of habitat, Alternatives 3 through 7 would have reduced impacts, as described above for the discussions of direct and indirect impacts. Reduced impacts would occur because VCC would not be constructed under Alternatives 4 through 7 and additional pullbacks from the Santa Clara River and its tributaries and other Project footprint reductions would occur under Alternative 7 compared to Alternatives 2 through 6. The combined direct and indirect permanent loss of suitable

habitat for southwestern spiny rush occurring as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Secondary Impacts

Short-term and long-term secondary impacts could occur as a result of implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC (Alternative 3 only), and Entrada planning areas under Alternatives 3 through 7 and would be similar to those presented above for Alternative 2 because each alternative has similar short-term construction activities and long-term effects due to factors such as increased human activity, noise, roads, bridges, and lighting. The loss of or degradation of suitable habitat and the loss of individual southwestern spiny rush due to secondary impacts resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas under Alternatives 3 through 7 would be adverse but not significant.

Mitigation Strategy and Summary

This species would not be subject to significant direct, indirect or secondary impacts by the proposed Project. Although no mitigation is required, southwestern spiny rush will benefit from previously incorporated Mitigation Measures SP-4.6-53 and SP-4.6-59, which state that at the time of any subdivision map submittal proposing construction, the County may require updated site-specific surveys for rare, threatened, or endangered plant or animal species that may be present, and that consultation shall occur with the County and CDFG before surveys, after surveys, at subdivision map approval, and during development/disturbance. Based on the results of the surveys and consultation with the County and CDFG, additional conditions and mitigation measures may be required.

As this plant is associated with riparian areas, southwestern spiny rush will also benefit from previously incorporated measures SP-4.6-1 through SP-4.6-16 and SP-4.6-63, which provide requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, and corrective measures) for the revegetation, restoration, and/or enhancement of the riparian areas within the River Corridor SMA. Guidelines are provided for exotics control, temporary irrigation, mitigation banking, annual reporting to the state and/or federal permitting agency, and a 1:1 replacement of riparian resources.

Southwestern spiny rush will benefit from BIO-1 through BIO-16, which include requirements for the development of conceptual wetlands mitigation plans (including planting palettes, assessment of functions and values, mitigation ratios, monitoring methods, success criteria, corrective measures, *etc*.) for the revegetation, restoration, and/or enhancement of the riparian areas within the Project site. Guidelines are provided for the replacement of native riparian trees,

exotics control, temporary irrigation, "in-lieu fees," mitigation banking, passive restoration using native mulch, minimization of temporary impacts, annual reporting to the Corps and CDFG, and sub-notification letter requirements. CDFG jurisdictional riparian habitat meeting success criteria (for permanent impacts) two years or more prior to construction impact: for all vegetation communities = 1:1 ratio. Attainment of success criteria less than two years in advance of impact: low reach value communities = 1:1 to 2:1 ratios; moderate reach value communities = 1:1 to 3:1 ratios; high reach value communities = 1:1 to 4:1 ratios.

4.5.6 MITIGATION MEASURES

Eighty mitigation measures were identified in the Newhall Ranch Specific Plan Program EIR (County of Los Angeles 2003) for biological resources. These measures (SP-4.6-1 through SP-4.6-80) are included below in **Subsection 4.5.6.1**. Eighty-nine additional mitigation measures have been developed for this EIS/EIR and are included below in **Subsection 4.5.6.2**. These additional measures (BIO-1 through BIO-89) are consistent with and supplement those mitigation measures listed in the previously certified Newhall Ranch Specific Plan Program EIR (County of Los Angeles 2003).

4.5.6.1 Mitigation Measures Already Required by the Adopted Specific Plan

SP-4.6-1 The restoration mitigation areas located within the River Corridor SMA shall be in areas that have been disturbed by previous uses or activities. Mitigation shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to those restorable areas that occur adjacent to existing patches (areas) of native habitat that support sensitive species, particularly Endangered or Threatened species. The goal is to increase habitat patch size and connectivity with other existing habitat patches while restoring habitat values that will benefit sensitive species.

SP-4.6-2 A qualified biologist shall prepare or review revegetation plans. The biologist shall also monitor the restoration effort from its inception through the establishment phase.

SP-4.6-3 Revegetation Plans may be prepared as part of a California Department of Fish and Game 1603 Streambed Alteration Agreement and/or a U.S. Army Corps of Engineers Section 404 Permit, and shall include:

- Input from both the Project proponent and resource agencies to assure that the Project objectives applicable to the River Corridor SMA and the criteria of this RMP are met.
- The identification of restoration/mitigation sites to be used. This effort shall involve an analysis of the suitability of potential sites to support the desired habitat, including a description of the existing conditions at the site(s) and such base line data information deemed necessary by the permitting agency.

SP-4.6-4 The revegetation effort shall involve an analysis of the site conditions such as soils and hydrology so that site preparation needs can be evaluated. The revegetation plan shall include the details and procedures required to prepare the restoration site for planting (*i.e.,* grading, soil preparation, soil stockpiling, soil amendments, *etc.*), including the need for a supplemental irrigation system, if any.

SP-4.6-5 Restoration of riparian habitats within the River Corridor SMA shall use plant species native to the Santa Clara River. Cuttings or seeds of native plants shall be gathered within the River Corridor SMA or purchased from nurseries with local supplies to provide good genetic stock for the replacement habitats. Plant species used in the restoration of riparian habitat shall be listed on the approved project plant palette (Specific Plan Table 2.6-1, Recommended Plant Species for Habitat Restoration in the River Corridor SMA) or as approved by the permitting State and Federal agencies.

SP-4.6-6 The final revegetation plans shall include notes that outline the methods and procedures for the installation of the plant materials. Plant protection measures identified by the project biologist shall be incorporated into the planting design/layout.

SP-4.6-7 The revegetation plan shall include guidelines for the maintenance of the mitigation site during the establishment phase of the plantings. The maintenance program shall contain guidelines for the control of non-native plant species, the maintenance of the irrigation system, and the replacement of plant species.

SP-4.6-8 The revegetation plan shall provide for monitoring to evaluate the growth of the developing habitat. Specific performance goals for the restored habitat shall be defined by qualitative and quantitative characteristics of similar habitats on the River (*e.g.*, density, cover, species composition, structural development). The monitoring effort shall include an evaluation of not only the plant material installed, but the use of the site by wildlife. The length of the monitoring period shall be determined by the permitting state and/or federal agency.

SP-4.6-9 Monitoring reports for the mitigation site shall be reviewed by the permitting State and/or Federal agency.

SP-4.6-10 Contingency plans and appropriate remedial measures shall also be outlined in the revegetation plan.

SP-4.6-11 Habitat enhancement as referred to in this document means the rehabilitation of areas of native habitat that have been moderately disturbed by past activities (*e.g.*, grazing, roads, oil and natural gas operations, *etc.*) or have been invaded by non-native plant species such as giant cane (*Arundo donax*) and tamarisk (*Tamarix* sp.).

SP-4.6-12 Removal of grazing is an important means of enhancement of habitat values. Without ongoing disturbance from cattle, many riparian areas will recover naturally. Grazing except as permitted as a long-term resource management activity will be removed

from the River Corridor SMA pursuant to the Long-Term Management Plan set forth in Section 4.6 of the Specific Plan EIR.

SP-4.6-13 To provide guidelines for the installation of supplemental plantings of native species within enhancement areas, a revegetation plan shall be prepared prior to implementation of mitigation (see guidelines for revegetation plans above). These supplemental plantings will be composed of plant species similar to those growing in the existing habitat patch (see Specific Plan Table 2.6-1).

SP-4.6-14 Not all enhancement areas will necessarily require supplemental plantings of native species. Some areas may support conditions conducive for rapid "natural" reestablishment of native species. The revegetation plan may incorporate means of enhancement to areas of compacted soils, poor soil fertility, trash or flood debris, and roads as a way of enhancing riparian habitat values.

SP-4.6-15 Removal of non-native species such as giant cane (*Arundo donax*), salt cedar or tamarisk (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), castor bean (*Ricans communis*), if included in a revegetation plan to mitigate impacts, shall be subject to the following standards:

- First priority shall be given to those habitat patches that support or have a high potential for supporting sensitive species, particularly Endangered or Threatened species.
- All non-native species removals shall be conducted according to a resource agency approved exotics removal program.
- Removal of non-native species in patches of native habitat shall be conducted in such a way as to minimize impacts to the existing native riparian plant species.

SP-4.6-16 Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources shall be conducted pursuant to the Oak Resources Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.

SP-4.6-17 Access to the River Corridor SMA for hiking and biking shall be limited to the River trail system (including the Regional River Trail and various Local Trails) as set forth in this Specific Plan.

- The River trail system shall be designed to avoid impacts to existing native riparian habitat, especially habitat areas known to support sensitive species. Where impacts to riparian habitat are unavoidable, disturbance shall be minimized and mitigated as outlined above under Mitigation Measures 4.6-1 through 4.6-8.

- Access to the River Corridor SMA will be limited to day time use of the designated trail system.
- Signs indicating that no pets of any kind will be allowed within the River Corridor SMA, with the exception that equestrian use is permitted on established trails, shall be posted along the River Corridor SMA.
- No hunting, fishing, or motor or off-trail bike riding shall be permitted.
- The trail system shall be designed and constructed to minimize impacts on native habitats.

SP-4.6-18 Where development lies adjacent to the boundary of the River Corridor SMA a transition area shall be designed to lessen the impact of the development on the conserved area. Transition areas may be comprised of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Exhibits 2.6-4, 2.6-5, and 2.6-6 indicate the relationship between the River Corridor SMA and the development (disturbed) areas of the Specific Plan. The SMAs and the Open Area as well as the undisturbed portions of the development areas are shown in green. As indicated on the exhibits, on the south side of the river the River Corridor SMA is separated from development by the river bluffs, except in one location. The Regional River Trail will serve as transition area on the north side of the river where development areas adjoin the River Corridor SMA (excluding Travel Village).

SP-4.6-19 The following are the standards for design of transition areas:

- In all locations where there is no steep grade separation between the River Corridor SMA and development, a trail shall be provided along this edge.
- Native riparian plants shall be incorporated into the landscaping of the transition areas between the River Corridor SMA and adjacent development areas where feasible for their long-term survival. Plants used in these areas shall be those listed on the approved plant palette (Specific Plan Table 2.6-2 of the Resource Management Plan [Recommended Plants for Transition Areas Adjacent to the River Corridor SMA]).
- Roads and bridges that cross the River Corridor SMA shall have adequate barriers at their perimeters to discourage access to the River Corridor SMA adjacent to the structures.
- Where bank stabilization is required to protect development areas, it shall be composed of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other locations where public health and safety requirements necessitate concrete or other bank protection.

- A minimum 100-foot-wide buffer adjacent to the Santa Clara River should be required between the top river side of bank stabilization and development within the Land Use Designations Residential Low Medium, Residential Medium, Mixed-Use and Business Park unless, through Planning Director review in consultation with the staff biologist, it is determined that a lesser buffer would adequately protect the riparian resources within the River Corridor, or that a 100-foot-wide buffer is infeasible for physical infrastructure planning. The buffer area may be used for public infrastructure, such as: flood control access; sewer, water and utility easements; abutments; trails and parks, subject to findings of consistency with the Specific Plan and applicable County policies.

SP-4.6-20 The following guidelines shall be followed during any grading activities that take place within the River Corridor SMA:

- Grading perimeters shall be clearly marked and inspected by the project biologist prior to grading occurring within or immediately adjacent to the River Corridor SMA.
- The project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-21 Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the River Corridor SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3 of the Specific Plan.

SP-4.6-22 Upon completion of development of all land uses, utilities, roads, flood control improvements, bridges, trails, and other improvements necessary for implementation of the Specific Plan within the River Corridor in each subdivision allowing construction within or adjacent to the River Corridor, a permanent, non-revocable *conservation and public access easement* shall be offered to the County of Los Angeles pursuant to Mitigation Measure 4.6-23, below, over the portion of the River Corridor SMA within that subdivision.

SP-4.6-23 The River Corridor SMA *Conservation and Public Access Easement* shall be offered to the County of Los Angeles prior to the transfer of the River Corridor SMA ownership, or portion thereof to the management entity described in Mitigation Measure 4.6-26, below.

SP-4.6-24 The River Corridor SMA *Conservation and Public Access Easement* shall prohibit grazing, except as a long-term resource management activity, and agriculture within the River Corridor and shall restrict recreation use to the established trail system.

Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended in the event of the filing of any legal action against Los Angeles County challenging final approval of the Newhall Ranch Specific Plan and any related project approvals or certification of the Final EIR for Newhall Ranch. Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended by the time period between the filing of any such legal action and the entry of a final judgment by a court with appropriate jurisdiction, after exhausting all rights of appeal, or execution of a final settlement agreement between all parties to the legal action, whichever occurs first.

SP-4.6-25 The River Corridor SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-26 Prior to the recordation of the River Corridor SMA *Conservation and Public Access Easement* as specified in Mitigation Measure 4.6-23, above, the land owner shall provide a plan to the County for the permanent ownership and management of the River Corridor SMA, including any necessary financing. This plan shall include the transfer of ownership of the River Corridor SMA to the Center for Natural Lands Management, or if the Center for Natural Lands Management is declared bankrupt or dissolved, ownership will transfer or revert to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members).

SP-4.6-26a Two types of habitat restoration may occur in the High Country SMA: (1) riparian revegetation activities principally in Salt Creek Canyon; and (2) oak tree replacement in, or adjacent to, existing oak woodlands and savannahs.

- Mitigation requirements for riparian revegetation activities within the High Country SMA are the same as those for the River Corridor SMA and are set forth in Mitigation Measures 4.6-1 through 4.6-11 and 4.6-13 through 4.6-16, above.
- Mitigation requirements for oak tree replacement are set forth in Mitigation Measure 4.6-48, below.

SP-4.6-27 Removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs, is a principal means of enhancing habitat values in the creeks, brushland and woodland areas of the SMA. The removal of grazing in the High Country SMA is discussed below under (b) 4. Long Term Management. All enhancement activities for riparian habitat within the

High Country SMA shall be governed by the same provisions as set forth for enhancement in the River Corridor SMA. Specific Plan Table 2.6-3 of the Resource Management Plan provides a list of appropriate plant species for use in enhancement areas in the High Country SMA.

SP-4.6-28 Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources, shall be conducted pursuant to the Oak Resource Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.

SP-4.6-29 Access to the High Country SMA will be limited to day time use of the designated trail system.

SP-4.6-30 No pets of any kind will be allowed within the High Country SMA, with the exception that equestrian use is permitted on established trails.

SP-4.6-31 No hunting, fishing, or motor or trail bike riding shall be permitted.

SP-4.6-32 The trail system shall be designed and constructed to minimize impacts on native habitats.

SP-4.6-33 Construction of buildings and other structures (such as patios, decks, *etc*.) shall only be permitted upon developed pads within Planning Areas OV-04, OV-10, PV-02, and PV-28 and shall not be permitted on southerly slopes facing the High Country SMA (Planning Area HC-01) or in the area between the original SEA 20 boundary and the High Country boundary. If disturbed by grading, all southerly facing slopes which adjoin the High Country SMA within those Planning Areas shall have the disturbed areas revegetated with compatible trees, shrubs and herbs from the list of plant species for south and west facing slopes as shown in Table 2.6-3, Recommended Plant Species For Use In Enhancement Areas In The High Country.

Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones as set forth in Mitigation Measure 4.6-49. Within fuel modification areas, trees and herbs from Table 2.6-3 of the Resource Management Plan should be planted toward the top of slopes; and trees at lesser densities and shrubs planted on lower slopes.

SP-4.6-34 Grading perimeters shall be clearly marked and inspected by the project biologist prior to impacts occurring within or adjacent to the High Country SMA.

SP-4.6-35 The project biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

SP-4.6-36 Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the High Country SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3.

SP-4.6-37 The High Country SMA shall be offered for dedication in three approximately equal phases of approximately 1,400 acres each proceeding from north to south, as follows:

1. The first offer of dedication will take place with the issuance of the 2,000th residential building permit of Newhall Ranch;
2. The second offer of dedication will take place with the issuance of the 6,000th residential building permit of Newhall Ranch; and
3. The remaining offer of dedication will be completed by the 11,000th residential building permit of Newhall Ranch.
4. The Specific Plan applicant shall provide a quarterly report to the Departments of Public Works and Regional Planning which indicates the number of residential building permits issued in the Specific Plan area by subdivision map number.

SP-4.6-38 Prior to dedication of the High Country SMA, a *conservation and public access easement* shall be offered to the County of Los Angeles and a conservation and management easement offered to the Center for Natural Lands Management. The High Country SMA *Conservation and Public Access Easement* shall be consistent in its provisions with any other *conservation easement*s to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-39 The High Country SMA conservation and public access easement shall prohibit grazing within the High Country, except for those grazing activities associated with the long-term resource management programs, and shall restrict recreation to the established trail system.

SP-4.6-40 The High Country SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-41 The High Country SMA shall be offered for dedication in fee to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members). The *joint powers authority* will have overall responsibility for recreation within and conservation of the High Country.

SP-4.6-42 An appropriate type of service or assessment district shall be formed under the authority of the Los Angeles County Board of Supervisors for the collection of up to $24 per single family detached dwelling unit per year and $15 per single family attached dwelling unit per year, excluding any units designated as Low and Very Low affordable housing units pursuant to Section 3.10, Affordable Housing Program of the Specific Plan. This revenue would be assessed to the homeowner beginning with the occupancy of each dwelling unit and distributed to the *joint powers authority* for the purposes of recreation, maintenance, construction, conservation and related activities within the *High Country Special Management Area*.

SP-4.6-43 Suitable portions of *Open Area* may be used for mitigation of riparian, *oak resources*, or elderberry scrub. Mitigation activities within *Open Area* shall be subject to the following requirements, as applicable.

- River Corridor SMA Mitigation Requirements, including: Mitigation Measures 4.6-1 through 4.6-11 and 4.6-13 through 4.6-16; and
- High Country SMA Mitigation Requirements, including: Mitigation Measures 4.6-27, 4.6-29 through 4.6-42, and
- Mitigation Banking — Mitigation Measure 4.6-16.

SP-4.6-44 Drainages with flows greater than 2,000 cfs will have soft bottoms. Bank protection will be of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.

SP-4.6-45 The precise alignments and widths of major drainages will be established through the preparation of drainage studies to be approved by the County at the time of subdivision maps which permit construction.

SP-4.6-46 While Open Area is generally intended to remain in a natural state, some grading may take place, especially for parks, major drainages, trails, and roadways. Trails are also planned to be within Open Area.

SP-4.6-47 At the time that final subdivision maps permitting construction are recorded, the *Open Area* within the map will be offered for dedication to the Center for Natural Lands Management. Community Parks within *Open Area* are intended to be public parks. Prior to the offer of dedication of *Open Area* to the Center for Natural Lands Management, all necessary *conservation and public access easements*, as well as easements for infrastructure shall be offered to the County.

SP-4.6-47a Mitigation Banking will be permitted within the River Corridor SMA, the High Country SMA, and the *Open Area land use designations,* subject to the following requirements:

- Mitigation banking activities for riparian habitats will be subject to State and Federal regulations, and shall be conducted pursuant to the mitigation requirements set forth in Mitigation Measure 4.6-1 through 4.6-15 above.
- Mitigation banking for oak resources shall be conducted pursuant to 4.6-48, below.
- Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester

SP-4.6-48 Standards for the restoration and enhancement of oak resources within the High Country SMA and the Open Area include the following (oak resources include oak trees of the sizes regulated under the County Oak Tree Ordinance, southern California black walnut trees, Mainland cherry trees, and Mainland cherry shrubs):

- To mitigate the impacts to oak resources that may be removed as development occurs in the Specific Plan Area, replacement trees shall be planted in conformance with the oak tree ordinance in effect at that time.
- Oak resource species obtained from the local gene pool shall be used in restoration or enhancement.
- Prior to recordation of construction-level final subdivision maps, an oak resource replacement plan shall be prepared that provides the guidelines for the oak tree planting and/or replanting. The Plan shall be reviewed by the Los Angeles Department of Regional Planning and the County Forester and shall include the following: site selection and preparation, selection of proper species including sizes and planting densities, protection from herbivores, site maintenance, performance standards, remedial actions, and a monitoring program.
- All plans and specifications shall follow County oak tree guidelines, as specified in the County Oak Tree Ordinance.

SP-4.6-49 To minimize the potential exposure of the development areas, Open Area, and the SMAs to fire hazards, the Specific Plan is subject to the requirements of the Los Angeles County Fire Protection District (LACFPD), which provides fire protection for the area. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMA, a wildfire fuel modification plan shall be prepared in accordance with the fuel

modification ordinance standards in effect at that time and shall be submitted for approval to the County Fire Department.

SP-4.6-50 The wildfire fuel modification plan shall depict a fuel modification zone the size of which shall be consistent with the County fuel modification ordinance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance.

SP-4.6-51 In order to enhance the habitat value of plant communities that require fuel modification, fire retardant plant species containing habitat value may be planted within the fuel modification zone. Typical plant species suitable for Fuel Modification Zones are indicated in Specific Plan Table 2.6-5 of the Resource Management Plan. Fuel modification zones adjacent to SMAs and Open Areas containing habitat of high value such as oak woodland and savannas shall utilize a more restrictive plant list, which shall be reviewed by the County Forester.

SP-4.6-52 The wildfire fuel modification plan shall include the following construction period requirements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to the County Fire Department requirements.

SP-4.6-53 If, at the time any subdivision map proposing construction is submitted, the County determines through an Initial Study, or otherwise, that there may be Rare, Threatened or Endangered, plant or animal species on the property to be subdivided, then, in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, current, updated site-specific surveys for all such animal or plant species shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 within those areas of the Specific Plan where such animal or plant species occur or are likely to occur.

The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other Rare, Sensitive, Threatened, or Endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted during appropriate seasons by qualified botanists or qualified wildlife biologists in a manner that will locate any Rare, Sensitive, Threatened, or Endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the United States Fish

and Wildlife Service or the California Department of Fish and Game, all such protocols shall be followed in preparing the updated site-specific surveys.

All site-specific survey work shall be documented in a separate report containing at least the following information: (a) project description, including a detailed map of the project location and study area; (b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; (c) detailed description of survey methodologies; (d) dates of field surveys and total person-hours spent on the field surveys; (e) results of field surveys, including detailed maps and location data; (f) an assessment of potential impacts; (g) discussion of the significance of the Rare, Threatened or Endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; (h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (*CEQA Guidelines* section 15370); (i) references cited and persons contacted; and (j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts."

SP-4.6-54 Prior to development within or disturbance to occupied unarmored threespine stickleback habitat, a formal consultation with the USFWS shall occur.

SP-4.6-55 Prior to development or disturbance within wetlands or other sensitive habitats, permits shall be obtained from pertinent Federal and State agencies and the Specific Plan shall conform to the specific provisions of said permits. Performance criteria shall include that described in Mitigation Measures 4.6-1 through 4.6-16 and 4.6-42 through 4.6-47 for wetlands, and Mitigation Measures 4.6-27, 4.6-28, and 4.6-42 through 4.6-48 for other sensitive habitats.

SP-4.6-56 All lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

SP-4.6-57 Where bridge construction is proposed and water flow would be diverted, blocking nets and seines shall be used to control and remove fish from the area of activity. All fish captured during this operation would be stored in tubs and returned unharmed back to the river after construction activities were complete.

SP-4.6-58 To limit impacts to water quality the Specific Plan shall conform with all provisions of required NPDES permits and water quality permits that would be required by the State of California Regional Water Quality Control Board.

SP-4.6-59 Consultation shall occur with the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones:

1. Before Surveys. Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used.

2. After Surveys. After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work.

3. Subdivision Map Submittal. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County.

4. Development/Disturbance and Further Mitigation. Prior to any development within, or disturbance to, habitat occupied by Rare, Threatened, or Endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both USFWS and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on Endangered, Rare or Threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.

SP-4.6-60 If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may be elderberry scrub vegetation on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.

SP-4.6-61 If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may be mainland cherry trees and/or mainland cherry shrubs on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.

SP-4.6-62 When a map revision or Substantial Conformance determination on any subdivision map or Conditional Use Permit would result in changes to an approved oak tree permit, then the oak tree report for that oak tree permit must be amended for the area of change, and the addendum must be approved by the County Forester prior to issuance of grading permits for the area of the map or CUP being changed.

SP-4.6-63 Riparian resources that are impacted by buildout of the Newhall Ranch Specific Plan shall be restored with similar habitat at the rate of one acre replaced for each acre lost.

SP-4.6-64 The operator of the golf course shall prepare a Golf Course Maintenance Plan which shall include procedures to control storm water quality and ground water quality as a result of golf course maintenance practices, including irrigation, fertilizer, pesticide and herbicide use. This Plan shall be prepared in coordination with the County biologist and approved by the County Planning Director prior to the issuance of a Certificate of Occupancy.

SP-4.6-65 In order to facilitate the conservation of the spineflower on the Newhall Ranch Specific Plan site, the applicant, or its designee, shall, concurrent with Specific Plan approval, agree to the identified special study areas shown below in **Figure 2.6-8**, Spineflower Mitigation Area Overlay. The applicant, or its designee, further acknowledges that, within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**), changes will likely occur to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level. The applicant, or its designee, shall design subdivision maps that are responsive to the characteristics of the spineflower and all other Endangered plant species that may be found on the Specific Plan site.

SP-4.6-66 Direct impacts to known spineflower populations within the Newhall Ranch Specific Plan area shall be avoided or minimized through the establishment of one or more on-site preserves that are configured to ensure the continued existence of the species in perpetuity. Preserve(s) shall be delineated in consultation with the County and CDFG, and will likely require changes and revisions to Specific Plan development footprints for lands within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**).

Delineation of the boundaries of Newhall Ranch spineflower preserve(s) for the entire Specific Plan area shall be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs.

A sufficient number of known spineflower populations shall be included within the Newhall Ranch spineflower preserve(s) in order to ensure the continued existence of the species in perpetuity. The conservation of known spineflower populations shall be established in consultation with the County and CDFG, and as consistent with standards governing issuance of an incidental take permit for spineflower pursuant to Fish and Game Code Section 2081, subdivision (b).

In addition to conservation of known populations, spineflower shall be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s). The creation of introduced populations shall require seed collection and/or top soil at impacted spineflower locations and nursery propagation to increase seed and sowing of seed. The seed collection activities, and the maintenance of the bulk seed repository, shall be approved in advance by the County and CDFG.

Once the boundaries of the Newhall Ranch spineflower preserve(s) are delineated, the project applicant, or its designee, shall be responsible for conducting a spineflower population census within the Newhall Ranch spineflower preserve(s) annually for 10 years. (These census surveys shall be in addition to the surveys required by Mitigation Measure 4.6-53, above.) The yearly spineflower population census documentation shall be submitted to the County and CDFG, and maintained by the project applicant, or its designee. If there are any persistent population declines documented in the annual population census reports, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. In no event, however, shall project-related activities jeopardize the continued existence of the Newhall Ranch spineflower populations. If a persistent population decline is documented, such as a trend in steady population decline that persists for a period of five consecutive years, or a substantial drop in population is detected over a 10-year period, spineflower may be introduced in consultation with CDFG in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County and CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, including monitoring, as approved by the County and CDFG.

Annual viability reports shall be submitted to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s) to ensure long-term documentation of the spineflower population status within the Newhall Ranch preserve(s). In the event annual status reports indicate the spineflower population within the Newhall Ranch preserve(s) is not stable and viable 10 years following delineation of the spineflower preserve(s), the project applicant, or its designee, shall continue to submit annual status reports to the County and CDFG for a period of no less than an additional five years.

SP-4.6-67 Indirect impacts associated with the interface between the preserved spineflower populations and planned development within the Newhall Ranch Specific Plan shall be avoided or minimized by establishing open space connections with Open Area, River Corridor, or High Country land use designations. In addition, buffers (*i.e.*, setbacks from developed, landscaped or other use areas) shall be established around portions of the delineated preserve(s) not connected to Open Area, the River Corridor or the High Country land use designations. The open space connections and buffer configurations shall take into account local hydrology, soils, existing and proposed adjacent land uses, the presence of non-native invasive plant species, and seed dispersal vectors.

Open space connections shall be configured such that the spineflower preserves are connected to Open Area, River Corridor, or High Country land use designations to the extent practicable. Open space connections shall be of adequate size and configuration to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). Open space connections for the spineflower preserve(s) shall be configured in consultation with the County and CDFG. Open space connections for the spineflower preserve(s) shall be established for the entire Specific Plan area in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

For preserves and/or those portions of preserves not connected to Open Area, River Corridor, or High Country land use designations, buffers shall be established at variable distances of between 80 and 200 feet from the edge of development to achieve a moderate to high likelihood of effectiveness in avoiding or minimizing indirect impacts (*e.g.*, invasive plants, increased fire frequency, trampling, chemicals, *etc.*) to the spineflower preserve(s). The buffer size/configuration shall be guided by the analysis set forth in the "*Review of Potential Edge Effects on the San Fernando Valley Spineflower*," prepared by Conservation Biology Institute, January 19, 2000, and other sources of scientific information and analysis, which are available at the

time the preserve(s) and buffers are established. Buffers for the spineflower preserve(s) shall be configured in consultation with the County and CDFG for the entire Specific Plan area. Buffers for the spineflower preserve(s) shall be established in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs.

Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process. No other development or disturbance of native habitat shall be allowed within the spineflower preserve(s) or buffer(s).

The project applicant, or its designee, shall be responsible for revegetating open space connections and buffer areas of the Newhall Ranch spineflower preserve(s) to mitigate temporary impacts due to grading that will occur within portions of those open space connections and buffer areas. The impacted areas shall be reseeded with a native seed mix to prevent erosion, reduce the potential for invasive non-native plants, and maintain functioning habitat areas within the buffer area. Revegetation seed mix shall be reviewed and approved by the County and CDFG.

SP-4.6-68 To protect the preserved Newhall Ranch spineflower populations, and to further reduce potential direct impacts to such populations due to unrestricted access, the project applicant, or its designee, shall erect and maintain temporary orange fencing and prohibitive signage around the Newhall Ranch preserve(s), open space connections and buffer areas, which are adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris or anything associated with construction activities.

Following the final phase of construction of any Newhall Ranch subdivision map adjacent to the Newhall Ranch spineflower preserve(s), the project applicant, or its designee, shall install and maintain permanent fencing along the subdivision tract bordering the preserve(s). Permanent signage shall be installed on the fencing along the preservation boundary to indicate that the fenced area is a biological preserve, which contains protected species and habitat, that access is restricted, and that trespassing and fuel modification are prohibited within the area. The permanent fencing shall be designed to allow wildlife movement.

The plans and specifications for the permanent fencing and signage shall be approved by the County and CDFG prior to the final phase of construction of any Newhall Ranch subdivision map adjacent to a Newhall Ranch spineflower preserve(s).

SP-4.6-69 Indirect impacts resulting from changes to hydrology (*i.e.*, increased water runoff from surrounding development) at the interface between spineflower preserve(s) and planned development within the Newhall Ranch Specific Plan shall be avoided or mitigated to below a level of significance.

Achievement of this standard will be met through the documented demonstration by the project applicant, or its designee, that the storm drain system achieves pre-development hydrological conditions for the Newhall Ranch spineflower preserve(s). To document such a condition, the project applicant, or its designee, shall prepare a study of the pre- and post-development hydrology, in conjunction with Newhall Ranch subdivision maps adjacent to spineflower preserve(s). The study shall be used in the design and engineering of a storm drain system that achieves pre-development hydrological conditions. The study must conclude that proposed grade changes in development areas beyond the buffers will maintain pre-development hydrology conditions within the preserve(s). The study shall be approved by the Planning Director of the County, and the resulting conditions confirmed by CDFG.

The storm drain system for Newhall Ranch subdivision maps adjacent to any spineflower preserves must be approved by the County prior to the initiation of any grading activities.

SP-4.6-70 Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct impacts to known Newhall Ranch spineflower populations associated with proposed road construction or modifications to existing roadways shall be further assessed for proposed road construction at the Newhall Ranch subdivision map level, in conjunction with the tiered EIR required for each subdivision map. To avoid or substantially lessen direct impacts to known spineflower populations, Specific Plan roadways shall be redesigned or realigned, to the extent practicable, to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67. The project applicant, or its designee, acknowledges that that road redesign and realignment is a feasible means to avoid or substantially lessen potentially significant impacts on the now known Newhall Ranch spineflower populations. Road redesign or alignments to be considered at the subdivision map level include:

(a) Commerce Center Drive;

(b) Magic Mountain Parkway;

(c) Chiquito Canyon Road;

(d) Long Canyon Road;

(e) San Martinez Grande Road;

(f) Potrero Valley Road;

(g) Valencia Boulevard; and

(h) Any other or additional roadways that have the potential to significantly impact known Newhall Ranch spineflower populations.

Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch, unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process.

SP-4.6-71 Consistent with the Spineflower Mitigation Area Overlay reflected in Mitigation Measure 4.6-65, direct impacts to known Newhall Ranch spineflower populations shall be further assessed at the Newhall Ranch subdivision map level, in conjunction with the required tiered EIR process. To avoid or substantially lessen impacts to known spineflower populations at the subdivision map level, the project applicant, or its designee, may be required to adjust Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in Mitigation Measures 4.6-66 and 4.6-67 for all future Newhall Ranch subdivision maps that encompass identified spineflower populations.

SP-4.6-72 A Fire Management Plan shall be developed to avoid and minimize direct and indirect impacts to the spineflower, in accordance with the adopted Newhall Ranch Resource Management Plan (RMP), to protect and manage the Newhall Ranch spineflower preserve(s) and buffers.

The Fire Management Plan shall be completed by the project applicant, or its designee, in conjunction with approval of any Newhall Ranch subdivision map adjacent to a spineflower preserve.

The final Fire Management Plan shall be approved by the County of Los Angeles Fire Department through the processing of subdivision maps.

Under the final Fire Management Plan, limited fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools to allow the maximum preservation of Newhall Ranch spineflower populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower preserve(s). Controlled burning may be allowed in the future within the Newhall Ranch preserve(s) and buffers, provided that it is based upon a burn plan approved by the County of Los Angeles Fire Department and CDFG. The project applicant, or its designee, shall also be responsible for annual maintenance of fuel modification zones, including, but not limited to, removal of undesirable non-native plants, revegetation with acceptable locally indigenous plants and clearing of trash and other debris in accordance with the County of Los Angeles Fire Department.

SP-4.6-73 At the subdivision map level, the project applicant, or its designee, shall design and implement project-specific design measures to minimize changes in surface water flows to the Newhall Ranch spineflower preserve(s) for all Newhall Ranch subdivision maps adjacent to the preserve(s) and buffers, and avoid and minimize indirect impacts to the spineflower. Prior to issuance of a grading permit for each such subdivision map, the project applicant, or its designee, shall submit for approval to the County plans and specifications that ensure implementation of the following design measures:

(a) During construction activities, drainage ditches, piping or other approaches will be put in place to convey excess storm water and other surface water flows away from the Newhall Ranch spineflower preserve(s) and connectivity/preserve design/buffers, identified in Mitigation Measures 4.6-66 and 4.6-67;

(b) Final grading and drainage design will be developed that does not change the current surface and subsurface hydrological conditions within the preserve(s);

(c) French drains will be installed along the edge of any roadways and fill slopes that drain toward the preserve(s);

(d) Roadways will be constructed with slopes that convey water flows within the roadway easements and away from the preserve(s);

(e) Where manufactured slopes drain toward the preserve(s), a temporary irrigation system would be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self sustaining;

(f) Underground utilities will not be located within or through the preserve(s). Drainage pipes installed within the preserve(s) away from spineflower populations to convey surface or subsurface water away from the populations will be aligned to avoid the preserve(s) to the maximum extent practicable; and

(g) Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the preserve(s) shall incorporate footing designs that minimize moisture collection.

SP-4.6-74 A knowledgeable, experienced botanist/biologist, subject to approval by the County and CDFG, shall be required to monitor the grading and fence/utility installation activities that involve earth movement adjacent to the Newhall Ranch spineflower preserve(s) to avoid the incidental take through direct impacts of conserved plant species, and to avoid disturbance of the preserve(s). The biological monitor will conduct biweekly inspections of the project site during such grading activities to ensure that the mitigation measures provided in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section) are implemented and adhered to.

Monthly monitoring reports, as needed, shall be submitted to the County verifying compliance with the mitigation measures specified in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).

The biological monitor will have authority to immediately stop any such grading activity that is not in compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section), and to take reasonable steps to avoid the take of, and minimize the disturbance to, spineflower populations within the preserve(s).

SP-4.6-75 The following measures shall be implemented to avoid and minimize indirect impacts to Newhall Ranch spineflower populations during all phases of project construction:

(a) Water Control. Watering of the grading areas would be controlled to prevent discharge of construction water into the Newhall Ranch preserve(s) or on ground sloping toward the preserve(s). Prior to the initiation of grading operations, the project applicant, or its designee, shall submit for approval to the County an irrigation plan describing watering control procedures necessary to prevent discharge of construction water into the Newhall Ranch preserve(s) and on ground sloping toward the preserve(s).

(b) Storm Water Flow Redirection. Diversion ditches would be constructed to redirect storm water flows from graded areas away from the Newhall Ranch preserve(s). To the extent practicable, grading of areas adjacent to the preserve(s) would be limited to spring and summer months (May through September) when the probability of rainfall is lower. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County a storm water flow redirection plan that demonstrates the flow of storm water away from the Newhall Ranch spineflower preserve(s).

(c) Treatment of Exposed Graded Slopes. Graded slope areas would be trimmed and finished as grading proceeds. Slopes would be treated with soil stabilization measures to minimize erosion. Such measures may include seeding and planting, mulching, use of geotextiles and use of stabilization mats. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County the treatments to be applied to exposed graded slopes that would ensure minimization of erosion.

SP-4.6-76 In conjunction with submission of the first Newhall Ranch subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs, the project applicant, or its designee, shall reassess project impacts, both direct and indirect, to the spineflower populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR and data from the updated plant surveys (see Specific Plan EIR Mitigation Measure 4.6-53).

This reassessment shall take place during preparation of the required tiered EIR for each subdivision map. If the reassessment results in the identification of new or additional impacts to Newhall Ranch spineflower populations, which were not previously known or identified, the mitigation measures set forth in this program, or a Fish and Game Code section 2081 permit(s) issued by CDFG, shall be required, along with any additional mitigation required at that time.

SP-4.6-77 Direct and indirect impacts to the preserved Newhall Ranch spineflower populations shall require a monitoring and management plan, subject to the approval of the County. The applicant shall consult with CDFG with respect to preparation of the Newhall Ranch spineflower monitoring/management plan. This plan shall be in place when the preserve(s) and connectivity/preserve design/buffers are established (see Mitigation Measures 4.6-66 and 4.6-67). The criteria set forth below shall be included in the plan.

Monitoring. The purpose of the monitoring component of the plan is to track the viability of the Newhall Ranch spineflower preserve(s) and its populations, and to ensure compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section).

The monitoring component of the plan shall investigate and monitor factors such as population size, growth or decline, general condition, new impacts, changes in associated vegetation species, pollinators, seed dispersal vectors, and seasonal responses. Necessary management measures will be identified. The report results will be sent annually to the County, along with photo documentation of the assessed site conditions.

The project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, with the concurrence of CDFG, to conduct quantitative monitoring over the life of the Newhall Ranch Specific Plan. The botanist/biologist shall have a minimum of three years experience with established monitoring techniques and familiarity with southern California flora and target taxa. Field surveys of the Newhall Ranch spineflower preserve(s) will be conducted each spring. Information to be obtained will include: (a) an estimate of the numbers of spineflowers in each population within the preserve(s); (b) a map of the extent of occupied habitat at each population; (c) establishment of photo monitoring points to aid in documenting long-term trends in habitat; (d) aerial photographs of the preserved areas at five-year intervals; (e) identification of significant impacts that may have occurred or problems that need attention, including invasive plant problems, weed problems and fencing or signage repair; and (f) overall compliance with the adopted mitigation measures.

For a period of three years from Specific Plan re-approval, all areas of potential habitat on the Newhall Ranch site will be surveyed annually in the spring with the goal of identifying previously unrecorded spineflower populations. Because population size and distribution limits are known to vary depending on rainfall, annual surveys shall be conducted for those areas proposed for development in order to establish a database appropriate for analysis at the project-specific subdivision map level (rather than waiting to survey immediately prior to proceeding with the project-specific subdivision map process). In this way, survey results gathered over time (across years of varying rainfall) will provide information on ranges in population size and occupation. New populations, if they are found, will be mapped and assessed for inclusion in the preserve program to avoid impacts to the species.

Monitoring/Reporting. An annual report will be submitted to the County and CDFG by December 31st of each year. The report will include a description of the monitoring methods, an analysis of the findings, effectiveness of the mitigation program, site photographs, and adoptive management measures, based on the findings. Any significant adverse impacts, signage, fencing or compliance problems identified during monitoring visits will be reported to the County and CDFG for corrective action by the project applicant, or its designee.

Management. Based on the outcome of ongoing monitoring and additional project-specific surveys addressing the status and habitat requirements of the spineflower, active management of the Newhall Ranch spineflower preserve(s) will be required in perpetuity. Active management activities will be triggered by a downward population decline over 5 consecutive years, or a substantial drop in population over a 10-year period following County re-approval of the Specific Plan.

Examples of management issues that may need to be addressed in the future include, but are not limited to, control of exotic competitive non-native plant species, herbivory predation, weed control, periodic controlled burns, or fuel modification compliance.

After any population decline documented in the annual populations census following County re-approval of the Specific Plan, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. If a persistent population decline is documented, such as a trend in steady population decline persistent for a period of 5 consecutive years, or a substantial drop in population detected over a 10-year period, spineflower may be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. In connection with this monitoring component, the project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, to complete: (a) a study of the breeding and pollination biology of the spineflower, including investigation into seed physiology to assess parameters that may be important as management tools to guarantee self-sustainability of populations, which may otherwise have limited opportunity for germination; and (b) a population genetics study to document the genetic diversity of the Newhall Ranch spineflower population. The criteria for these studies shall be to develop data to make the Newhall Ranch spineflower management program as effective as possible. These studies shall be subject to approval by the County's biologist, with the concurrence of CDFG. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County with the concurrence of CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, as approved by the County and CDFG.

The length of the active management components set forth above shall be governed by attainment of successful management criteria set forth in the plan rather than by a set number of years.

SP-4.6-78 To the extent project-related direct and indirect significant impacts on spineflower cannot be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s), and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented in consultation with CDFG to further mitigate such impacts. Direct impacts (*i.e.*, take) to occupied spineflower areas shall be fully mitigated at a 4:1

ratio. Impacts to occupied spineflower areas caused by significant indirect effects shall be mitigated at a 1:1 ratio.

Introduction of new spineflower areas will be achieved through a combination of direct seeding and translocation of the existing soil seed bank that would be impacted by grading. Prior to any development within, or disturbance to, spineflower populations, on-site and off-site mitigation areas shall be identified and seed and top soil shall be collected. One-third of the collected seed shall be sent to the Rancho Santa Ana Botanical Garden for storage. One third of the seed shall be sent to the USDA National Seed Storage Lab in Fort Collins, Colorado for storage. One third shall be used for direct seeding of the on-site and off-site mitigation areas.

Direct seeding. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a program for the reintroduction of spineflower on Newhall Ranch. The reintroduction program shall include, among other information: (a) location map with scale; (b) size of each introduction polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation; (d) site characteristics; (e) protocol for seed collection and application; and (f) monitoring and reporting. The program shall be submitted to CDFG for input and coordination. The project applicant, or its designee, shall implement the reintroduction program prior to the initiation of grading. At least two candidate spineflower reintroduction areas will be created within Newhall Ranch and one candidate spineflower reintroduction area will be identified offsite. Both on-site and off-site reintroduction areas will be suitable for the spineflower in both plant community and soils, and be located within the historic range of the taxon. Success criteria shall be included in the monitoring/management plan, with criteria for the germination, growth, and production of viable seeds of individual plants for a specified period.

Although the reintroduction program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the reintroduction program.

Translocation. Prior to the initiation of grading, the project applicant, or its designee, shall submit to the County a translocation program for the spineflower. Translocation would salvage the topsoil of spineflower areas to be impacted due to grading. Salvaged spineflower soil seed bank would be translocated to the candidate spineflower reintroduction areas. The translocation program shall include, among other information: (a) location map with scale; (b) size of each translocation polygon; (c) plans and specifications for site preparation, including selective clearing of

competing vegetation; (d) site characteristics; (e) protocol for topsoil collection and application; and (f) monitoring and reporting. The translocation program shall be submitted to CDFG for input and coordination. Translocation shall occur within the candidate spineflower reintroduction areas onsite and offsite. Successful criteria for each site shall be included in the monitoring/management plan/with criteria for the germination and growth to reproduction of individual plants for the first year a specified period.

Although the translocation program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the translocation program.

SP-4.6-79 The project applicant, or its designee, shall engage in regular and ongoing consultation with the County and CDFG in connection with its ongoing agricultural operations in order to avoid or minimize significant direct impacts to the spineflower.

In addition, the project applicant, or its designee, shall provide 30 days advance written notice to the County and CDFG of the proposed conversion of its ongoing rangeland operations on Newhall Ranch to more intensive agricultural uses. The purpose of the advance notice requirement is to allow the applicant, or its designee, to coordinate with the County and CDFG to avoid or minimize significant impacts to the spineflower prior to the applicant's proposed conversion of its ongoing rangeland operations to more intensive agricultural uses. This coordination component will be implemented by or through the County's Department of Regional Planning and/or the Regional Manager of CDFG. Implementation will consist of the County and/or CDFG conducting a site visit of the proposed conversion area(s) within the 30-day period, and making a determination of whether the proposed conversion area(s) would destroy or significantly impact spineflower population in or adjacent to those areas. If it is determined that the conversion area(s) do not destroy or significantly impact spineflower populations, then the County and/or CDFG will authorize such conversion activities in the proposed conversion area(s). However, if it is determined that the conversion area(s) may destroy or significantly impact spineflower populations, then the County and/or CDFG will issue a stop work order to the applicant, or its designee. If such an order is issued, the applicant, or its designee, shall not proceed with any conversion activities in the proposed conversion area(s). However, the applicant, or the designee, may take steps to relocate the proposed conversion activities in an alternate conversion area(s). In doing so, the applicant, or its designee, shall follow the same notice and coordination provisions identified above. This conversion shall not include ordinary pasture maintenance and renovation or dry land farming operations consistent with rangeland management.

SP-4.6-80 Upon approval of tentative tract map(s) impacting the San Martinez portion of the Specific Plan site, the applicant shall work with the Department of Regional Planning staff and SEATAC to establish an appropriately sized preserve area to protect the spineflower population at San Martinez Canyon.

4.5.6.2 Additional Mitigation Measures Proposed by this EIS/EIR

BIO-1 Mitigation Measures SP-4.6-1 through SP-4.6-16 specify requirements for riparian mitigation conducted in the High Country SMA, Salt Creek area, and Open Area. The RMDP includes requirements for mitigation of both riparian and upland habitats (such as riparian adjacent big sagebrush scrub), and incorporates these Mitigation Measures (SP-4.6-1 through SP-4.6-16). A Comprehensive Mitigation Implementation Plan (CMIP) has been developed by Newhall Land that provides an outline of mitigation to offset impacts described in the RMDP. The CMIP demonstrates the feasibility of creating the required mitigation acreage from RMDP project impacts (see BIO-2).

Detailed wetlands mitigation plans, in accordance with the CMIP, shall be submitted to, and are subject to the approval of, the Corps and CDFG as part of the sub-notification letters for individual projects. Individual project submittals shall include applicable CMIP elements, complying with the requirements outlined below. The detailed wetlands mitigation plan shall specify, at a minimum, the following: (1) the location of mitigation sites; (2) site preparation, including grading, soils preparation, irrigation installation, (2a) the quantity (seed or nursery stock) and species of plants to be planted (all species to be native to region); (3) detailed procedures for creating additional vegetation communities; (4) methods for the removal of non-native plants; (5) a schedule and action plan to maintain and monitor the enhancement/restoration area; (6) a list of criteria by which to measure success of the mitigation sites (*e.g.*, percent cover and richness of native species, percent survivorship, establishment of self-sustaining native of plantings, maximum allowable percent of non-native species); (7) measures to exclude unauthorized entry into the creation/enhancement areas; and (8) contingency measures in the event that mitigation efforts are not successful. Individual project detailed wetlands mitigation plans shall also classify the biological value (as "high," "moderate," or "low") of the vegetation communities to be disturbed as defined in these conditions, or may be based on an agency-approved method (*e.g.*, Hybrid Assessment of Riparian Communities (HARC)). The biological value shall be used to determine mitigation replacement ratios required under BIO-2 and BIO-10. The detailed wetlands mitigation plans shall provide for the 3:1 replacement of any southern California black walnut to be removed from the riparian corridor for individual projects. The plan shall be subject to the approval of CDFG and the Corps and approved prior to

the impact to riparian resources. BIO-4 describes that the functions and values will be assessed for the riparian areas that will be removed, and BIO-2 and BIO-10 describe the replacement ratios for the habitats that will be impacted.

BIO-2 The permanent removal of CDFG jurisdictional riparian habitats in the river and tributaries shall be replaced by creating riparian habitats of similar functions and values (see BIO-4) on the Project site, or as allowed under BIO-10. Riparian habitat meeting success criteria (see BIO-6) two years in advance of the removal of riparian habitat at the construction site shall be in kind and at a 1:1 replacement ratio (except as indicated below). If replacement riparian habitat cannot meet the success criteria two years in advance of the Project, the ratios listed below in **Table 4.5-68** will apply.

Table 4.5-68
CDFG Jurisdictional Permanent Impacts Mitigation Ratios

Ratios Listed by Vegetation Types & Quality				
Vegetation Community	**Veg Code / ID**	**HIGH Reach Value* (Mit. Ratio)**	**MEDIUM Reach Value** (Mit. Ratio)**	**LOW Reach Value*** (Mit. Ratio)**
Southern Cottonwood–Willow Riparian Forrest	SCWRF	4:1	3:1	2:1
Southern Willow Scrub	SWS	3:1	2.5:1	2:1
Oak Woodland (Coast Live, Valley)	CLOW / VOW	3:1	2.5:1	2:1
Big Sagebrush Scrub	BSS	2.5:1	2:1	1.5:1
Mexican Elderberry Scrub	MES	2.5:1	2:1	1.5:1
Cismontane Alkaline Marsh	CAM	2.5:1	2:1	1.5:1
Coastal and Valley Fresh Water Marsh	CFWM	2:1	1.5:1	1:1
Mulefat Scrub	MFS	2:1	1.5:1	1.25:1
Arrowweed Scrub	AWS	2:1	1.5:1	1:1
California Sagebrush scrub, and CSB-dominated habitats	CSB, CSB-A, -BS, -CB, -CHP, and -PS	2:1	1.5:1	1:1
Herbaceous Wetland	HW	1.5:1	1.25:1	1:1
River Wash, emergent veg.	RW	1.5:1	1.25:1	1:1
Chaparral, Chamise Chaparral	CHP, CC	1.5:1	1.25:1	1:1
Coyote Brush Scrub	CYS	1.5:1	1.25:1	1:1
Eriodictyon Scrub	EDS	1.5:1	1.25:1	1:1
California Grass Lands	CGL	1:1	1:1	1:1
Agricultural / Disturbed / Developed	AGR / DL / DEV	1:1	1:1	1:1

Notes:
* HIGH reach value indicates a portion of the Santa Clara River or main tributary that scored above 0.79 Total Score utilizing the HARC methodology described in **Section 4.2**, Geomorphology and Riparian Resources, of this EIS/EIR.
** MEDIUM reach value indicates a portion of the Santa Clara River or main tributary that scored between 0.4 and 0.79 Total Score utilizing the HARC methodology described in **Section 4.2.**
*** LOW reach value indicates a portion of the Santa Clara River or main tributary that scored below 0.4 Total Score utilizing

Table 4.5-68
CDFG Jurisdictional Permanent Impacts Mitigation Ratios

the HARC methodology described in **Section 4.2.**
Ratios for Permanent Impacts to all classifications: Mitigation initiated two years prior to disturbance: 1:1 ratio; mitigation initiated less than two years after disturbance shall follow ratios in table above; mitigation initiated two to five years after disturbance shall add 0.5 to each value in the table above; and over five years, 1.0 is added to each value in the table above. (For example, initiation of mitigation of mulefat scrub three years after disturbance for a high habitat impact would be a ratio of 2.5:1, instead of 2:1 if initiated within two years of disturbance or 3:1 if initiated more than five years after disturbance.)
Ratios for Temporary Impacts to all classifications: Disturbance period less than two years, 1:1; two to five years, 1.5:1; over five years, 2:1, except for removal of southern cottonwood and oak woodlands, which shall be mitigated at 2:1 for High, 1.5:1 for Medium, and 1:1 for Low for all periods (except for pre-mitigated, which is 1:1).
Exotic/Invasive Species Removal, followed by restoration/revegetation, may be used to offset impacts above. Mitigation shall be credited at an acreage equivalent to the percentage of exotic vegetation at the restoration site. This means, for example, if a 10-acre area is occupied by 10% exotic species, restoration will be credited for 1 acre of impact. As appropriate and authorized by CDFG, reduced percentage credits may be applied for invasive removal with passive restoration (weeding and documentation of natural recruitment only).

BIO-3 Creation of new vegetation communities and restoration of impacted vegetation communities shall occur at suitable sites in or adjacent to the watercourses or in areas where bank stabilization would occur. The highest-priority vegetation community restoration sites are to be new riverbed and tributary areas created, or disturbed sites impacted, during the excavation of uplands for bank protection/stabilization activities. Restoration sites may also occur at locations outside the riverbed where there are appropriate hydrologic conditions to create a self-sustaining riparian vegetation community and where upland and riparian vegetation community values are absent or very low. All sites shall contain suitable hydrological conditions and surrounding land uses to ensure a self-sustaining functioning riparian vegetation community. Candidate restoration sites shall be described in the annual mitigation status report (BIO-12). Sites will be approved when the detailed wetlands mitigation plans are submitted to the Corps and CDFG as part of the sub-notification letters submitted for individual projects Status of the sites will be addressed as part of the annual mitigation status report and mitigation accounting form agency review. Each revegetation plan will include acreages, maps and site specific descriptions of the proposed revegetation site, including analysis of soils, hydrologic suitability, and present and future adjacent land uses.

BIO-4 Replacement vegetation communities shall be designed to replace the functions and values of the vegetation communities being removed. The replacement vegetation communities shall have similar dominant trees and understory shrubs and herbs (excluding exotic species) to those of the affected vegetation communities (see **Table 4.5-69** for example of recommended plant species for the River Corridor SMA and tributaries). In addition, the replacement vegetation communities shall be designed to

replicate the density and structure of the affected vegetation communities once the replacement vegetation communities have met the mitigation success criteria.

Table 4.5-69
Potential Plant Species for Vegetation Community Restoration in the River Corridor SMA and Tributaries

Trees	
red willow	*Salix laevigata*
arroyo willow	*Salix lasiolepis*
Fremont cottonwood	*Populus fremontii*
black cottonwood	*Populus balsamifera* ssp. *trichocarpa*
western sycamore	*Platanus racemosa*
Shrubs	
mulefat	*Baccharis salicifolia*
sandbar willow	*Salix exigua*
arrow weed	*Pluchea sericea*
Herbs	
mugwort	*Artemisia douglasiana*
western ragweed	*Ambrosia psilostachya*
cattail	*Typha latifolia*
bulrush	*Scirpus americanus*
prairie bulrush	*Scirpus maritimus*

Note: This is a recommended list. Other species may be found suitable based on site conditions and state and federal permits.

BIO-5 Average plant spacing shall be determined based on an analysis of vegetation communities to be replaced. The applicant shall develop plant spacing specifications for all riparian vegetation communities to be restored. Plant spacing specifications shall be reviewed and approved by the Corps and CDFG when restoration plans are submitted to the agencies as part of the sub-notification letters submitted to the Corps and CDFG for individual projects or as part of the annual mitigation status report and mitigation accounting form.

BIO-6 The revegetation site will be considered "complete" upon meeting all of the following success criteria. In a sub-notification letter, the applicant may request modification of success criteria on a project by project basis. Acceptance of such request will be at the discretion of CDFG and the Corps.

1. Regardless of the date of initial planting, any restoration site must have been without active manipulation by irrigation, planting, or seeding for a minimum of three years prior to Agency consideration of successful completion.

2. The percent cover and species richness of native vegetation shall be evaluated based on local reference sites established by CDFG and the Corps for the plant communities in the impacted areas.

3. Native shrubs and trees shall have at least 80% survivorship after two years beyond the beginning of the success evaluation start date. This may include natural recruitment.

4. Non-native species cover will be no more than 5% absolute cover through the term of the restoration.

5. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana)* and any species listed on the California State Agricultural list, or Cal-IPC list of noxious weeds will not be present on the revegetation site as of the date of completion approval.

6. Using the HARC assessment methodology, the compensatory mitigation site shall meet or exceed the baseline functional scores of the impact area in jurisdictional waters of the United States. If the compensatory mitigation site cannot meet or exceed the baseline functional score of the impact area in jurisdictional waters of the United States, additional mitigation area would be required to compensate for the functional loss.

BIO-7 If at any time prior to Agency approval of the restoration area, the site is subject to an act of God (flood, fires, or drought)) the applicant shall be responsible for replanting the damaged area. The site will be subject to the same success criteria as provided for in BIO-6. Should a second act of God occur prior to Agency approval of the restoration area, the applicant shall coordinate with the Agencies and develop an alternative restoration strategy(ies) to meet success requirements. This may include restoration elsewhere in the River corridor or tributaries.

BIO-8 Temporary irrigation shall be installed as necessary for plant establishment. Irrigation shall continue as needed until the restoration site becomes self sustaining, regarding survivorship and growth. Irrigation shall be terminated in the fall to provide the least stress to plants.

BIO-9 As an alternative to the creation/restoration of vegetation communities to compensate for permanent removal of riparian vegetation communities, in the Santa Clara River, the applicant may control invasive exotic plant species within the Upper Santa Clara River Sub-Watershed for a portion of the Santa Clara River mitigation required under BIO-2. The applicant may perform this work or contribute "in-lieu fees" to the

Upper Santa Clara River Arundo/Tamarisk Removal Program to perform this work, if available. The weed control sites shall be selected in a coordinated, logical manner to ensure that giant reed and other invasive weeds are controlled to improve and expand wildlife and endangered species habitat; reduce flooding, erosion, and fire hazards; improve water quality; and potentially increase stream flow/water quantity in the RMDP watercourses. Removal areas shall be kept free of exotic plant species for five years after initial treatment. In areas where extensive exotic removal occurs, revegetation with native plants or natural recruitment shall be documented.

BIO-10 The exotics control program may utilize methods and procedures in accordance with the provisions in the Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Final EIR, dated February 2006, or the applicant may propose alternative methods and procedures for Corps and CDFG review and approval pursuant to a sub-notification letter or annual mitigation status report submittal. Exotic plant species control will be credited at an acreage equivalent to the percentage of exotic vegetation at the restoration site. By example: a 10-acre site occupied by 10% exotic species will be credited for one acre of mitigation. The exotic weed control location will be documented on the annual mitigation status report and mitigation accounting form. If "in-lieu fees" are paid, it will be documented on the annual mitigation status report and mitigation accounting form, along with a reporting of the status of exotic vegetation treatment.

BIO-11 To provide an accurate and reliable accounting system for mitigation, the applicant utilizing the RMDP shall file a mitigation accounting form annually with the Corps and CDFG by April 1. This form shall document the amount of vegetation planted during the past year, any "in-lieu fees" paid for exotic invasive plant species control, the status of all mitigation credits to date, and any credits subtracted by projects implemented during the past year. The applicant, utilizing the RMDP, shall keep detailed records and provide a mitigation accounting form to the Corps and CDFG annually for review for the life of the permit, or until all credits have been used up for individual projects, and success criteria have been met. The Corps and CDFG shall provide concurrence within 60 days, including written verification for all restoration and weed removal sites that meet the specified performance criteria. Adequate proof of delivery of applicable reports would be required as well as subsequent notice to the Agencies requesting surety release.

BIO-12 An annual mitigation status report shall be submitted to the Corps and CDFG by April 1 of each year until satisfaction of success criteria identified in BIO-6. This report shall include any required plans for plant spacing, locations of candidate restoration and weed control sites or proposed "in-lieu fees," restoration methods, and vegetation community restoration performance standards. For active vegetation

community creation sites, the report shall include the survival, percent cover, and height of planted species; the number by species of plants replaced; an overview of the revegetation effort and its success in meeting performance criteria; the method used to assess these parameters; and photographs. For active exotics control sites, the report shall include an assessment of weed control; a description of the relative cover of native vegetation, bare areas, and exotic vegetation; an accounting of colonization by native plants; and photographs. The report shall also include the mitigation accounting form (see BIO-11), which outlines accounting information related to species planted or exotics control and mitigation credit remaining. The annual mitigation and monitoring report shall document the current functional capacity of the compensatory mitigation site using the HARC assessment methodology, as well as documenting the baseline functional scores of the impact site in jurisdictional waters of the United States.

BIO-13 The mitigation program shall incorporate applicable principles in the interagency Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (60 FR 58605–58614) to the extent feasible and appropriate, particularly the guidance on administration and accounting. Nothing in the section 404 or section 2081 Permit or section 1605 agreement shall preclude the applicant from selling mitigation credits to other parties wishing to use those permits or that agreement for a project and/or maintenance activity included in the permits/agreement.

BIO-14 Temporary impacts from construction activities in the riverbed shall be restricted to the following areas of disturbance: (1) an 85-foot-wide zone that extends into the river from the base of the rip-rap or gunite bank protection where it intercepts the river bottom; (2) 100 feet on either side of the outer edge of a new bridge or bridge to be modified; (3) a 60-foot-wide corridor for utility lines; (4) 20-foot-wide temporary access ramps; and (5) 60-foot roadway width temporary construction haul routes. The locations of these temporary construction sites and the routes of all access roads shall be shown on maps submitted with the sub-notification letter submitted to the Corps and CDFG for individual project approval. Any variation from these limits shall be submitted, with a justification for a variation for Corps and CDFG approval. The construction plans should indicate what type of vegetation, if any, would be temporarily disturbed or removed and the post-construction activities to facilitate revegetation of the temporarily impacted areas. The boundaries of the construction site and any temporary access roads within the riverbed shall be marked in the field with stakes and flagging. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside the work area and access roads.

BIO-15 All native riparian trees with a three-inch diameter at breast height (dbh) or greater in temporary construction areas shall be replaced using one- or five-gallon container plants, containered trees, or pole cuttings in the temporary construction areas in the winter following the construction disturbance. The mitigation ratios for temporary impacts to vegetation communities are described in BIO-2. The growth and survival of the replacement trees shall meet the performance standards specified in BIO-6. In addition, the growth and survival of the planted trees shall be monitored until they meet the self sustaining success criteria in accordance with the methods and reporting procedures specified in BIO-6, BIO-7, BIO-11, and BIO-12.

BIO-16 Vegetation communities temporarily impacted by the proposed Project shall be revegetated as described in BIO-2. Large trunks of removed trees may also remain on site to provide habitat for invertebrates, reptiles, and small mammals or may be anchored within the Project site for erosion control. To facilitate restoration, mulch, or native topsoil (the top six- to 12-inch deep layer containing organic material), may be salvaged from the work area prior to construction. Following construction, salvaged topsoil shall be returned to the work area and placed in the restoration site. Within one year, the Project biologist will evaluate the progress of restoration activities in the temporary impact areas to determine if natural recruitment has been sufficient for the site to reach performance goals. In the event that native plant recruitment is determined by the Project biologist to be inadequate for successful habitat establishment, the site shall be revegetated in accordance with the methods designed for permanent impacts (*i.e.*, seeding, container plants, and/or a temporary irrigation system may be recommended). This will help ensure the success of temporary mitigation areas. The applicant shall restore the temporary construction area per the success criteria and ratios described in BIO-1, BIO-2, and BIO-6. Annual monitoring reports on the status of the recovery of temporarily impacted areas shall be submitted to the Corps and CDFG as part of the annual mitigation status report (BIO-11 and BIO-12).

BIO-17 Focused surveys for arroyo toad shall be conducted. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for arroyo toad. The applicant shall contract with a qualified biologist to conduct focused surveys for arroyo toad. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and the Corps. The applicant shall implement measures required by the USFWS Biological Opinion that either supplement or supercede these measures. If present, the

applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG.

1) The applicant shall retain a qualified biologist with demonstrated expertise with arroyo toads to monitor all construction activities in potential arroyo toad habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of arroyo toad.

2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:

a. A detailed description of the arroyo toad, including color photographs;

b. The protection the arroyo toad receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act;

c. The protective measures being implemented to conserve the arroyo toad and other species during construction activities associated with the proposed Project; and

d. A point of contact if arroyo toads are observed.

3) All trash that may attract predators of the arroyo toad will be removed from work sites or completely secured at the end of each work day.

4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the USFWS and the authorized biologist. The applicant shall provide information on the general location of construction activities within habitat of the arroyo toad and the actions taken to reduce impacts to this species. Because arroyo toads may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologists will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on arroyo toads. The goal of this effort is to reduce the level of mortality of arroyo toads during construction. The parties realize that complete elimination of all mortality is likely not possible because some arroyo toads may occur anywhere within suitable habitat during any given season; the detection of every individual over large areas is impossible because of the small size, fossorial habits, and cryptic coloration of the arroyo toad.

5) Where construction can occur in habitat where arroyo toads are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas.

6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any arroyo toads from within the fenced area to suitable habitat outside of the fence. If arroyo toads are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG.

7) Fencing to exclude arroyo toads will be at least 24 inches in height.

8) The type of fencing must be approved by the authorized biologist and the USFWS/CDFG.

9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of arroyo toads may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly.

10) If arroyo toads are found within an area that has been fenced to exclude arroyo toads, activities will cease until the authorized biologist moves the arroyo toads.

11) If arroyo toads are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the arroyo toads. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS.

12) Any arroyo toads found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.

13) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.

14) Staging areas for all construction activities will be located on previously disturbed upland areas designated for this purpose. All staging areas will be fenced within potential toad habitat.

15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times.

16) Drift fence/pitfall trap surveys will be implemented in toad sensitive areas prior to construction in an effort to reduce potential mortality to this species. Prior to any construction activities in the Project area, silt fence shall be installed completely around the proposed work area and a qualified biologist should conduct a preconstruction/clearance survey of the work area for arroyo toads. Any toads found in the work area should be relocated to suitable habitat. The silt fence shall be maintained for the duration of the work activity.

17) The applicant shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when arroyo toads may be present on the access road. Traffic speed should be maintained at 15 mph or less in the work area.

BIO-18 Conduct focused surveys for California red-legged frogs. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for California red-legged frogs. The applicant shall contract with a qualified biologist to conduct focused surveys for California red-legged frogs. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. If present, the applicant shall implement measures required by the USFWS Biological Opinion for California red-legged frog that either supplement or supercede these measures. If present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG.

1) The applicant shall retain a qualified biologist with demonstrated expertise with California red-legged frogs to monitor all construction activities in potential red-legged frog habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of California red-legged frogs.

2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:

a. A detailed description of the California red-legged frogs, including color photographs;

b. The protection the California red-legged frog receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act;

c. The protective measures being implemented to conserve the California red-legged frogs and other species during construction activities associated with the proposed Project; and

d. A point of contact if California red-legged frogs are observed.

3) All trash that may attract predators of the California red-legged frogs will be removed from work sites or completely secured at the end of each work day.

4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the USFWS and the authorized biologist. The applicant shall provide information on the general location of construction activities within habitat of the California red-legged frogs and the actions taken to reduce impacts to this species. Because California red-legged frogs may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on California red-legged frogs. The goal of this effort is to reduce the level of mortality of California red-legged frogs during construction.

5) Work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas.

6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any California red-legged frogs from within the fenced area to suitable habitat outside of the fence. If California red-legged frogs are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG.

7) Fencing to exclude California red-legged frogs will be at least 24 inches in height.

8) The type of fencing must be approved by the authorized biologist and the USFWS/CDFG.

9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of California red-legged frogs may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly.

10) If California red-legged frogs are found within an area that has been fenced to exclude California red-legged frogs, activities will cease until the authorized biologist moves the California red-legged frog(s).

11) If California red-legged frogs are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the California red-legged frogs. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS.

12) Any California red-legged frogs found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, access to deep perennial pools, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.

13) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.

14) Staging areas for all construction activities will be located on previously disturbed upland areas, if possible, designated for this purpose. All staging areas will be fenced.

15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times.

BIO-19 The 1,518-acre Salt Creek area shall be offered for dedication to the public pursuant to Condition 42 of the approved Specific Plan using a "rough step" land dedication approach. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1). The Salt Creek area includes

approximately 629 acres of coastal scrub communities within both Ventura and Los Angeles counties. This land dedication shall be managed in conjunction with the 4,205-acre High Country SMA (containing 1,314 acres of coastal scrub communities).

a. To facilitate wildlife movement between the north side of SR-126 and the Salt Creek area, enhancements will be made to the existing agricultural undercrossing and to the agricultural land at the base of Salt Creek as discussed in BIO-59. A Wildlife Movement Enhancement Plan shall be submitted to the Corps and CDFG for approval prior to implementation. The plan shall include at the minimum the following:

    i. A portion of the agricultural field on the north side of SR-126 will be dedicated to wildlife movement. Trees and/or scrubs will be planted in the agricultural field to guide wildlife into the existing undercrossing.

    ii. On the south side of SR-126 two rows of trees/scrubs will be planted to guide wildlife to the Santa Clara River.

    iii. A wildlife corridor will be created through the agricultural fields at the base of Salt Creek Canyon.

BIO-20 Approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1) using a "rough step" land dedication approach. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated. In the event that the functional value of this burned habitat has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events, then adaptive management pursuant to BIO-21 will be implemented for coastal scrub restoration.

BIO-21 Supplemental restoration of coastal scrub shall be conducted as an adaptive management measure pursuant to BIO-20. Eight areas were identified in the Draft Newhall Ranch Mitigation Feasibility Report in the High Country SMA, Salt Creek area, and River Corridor SMA (Dudek 2007A) for coastal scrub restoration. In the event that coastal scrub restoration is required pursuant to BIO-20, the applicant shall

develop a Coastal Scrub Restoration Plan, subject to the approval of CDFG. The plan shall specify, at a minimum, the following: (1) the location of mitigation sites to be selected from suitable mitigation land in the High Country and Salt Creek areas identified in the Feasibility Study; (2) a description of "target" vegetation (native shrubland) to include estimated cover and abundance of native shrubs; (3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as appropriate; (4) methods for the removal of non-native plants (*e.g*., mowing, weeding, raking, herbicide application, or burning); (5) the source of all plant propagules (*e.g.*, seed, potted nursery stock, *etc*. collected from within five miles of the restoration site), the quantity and species of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; (6) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than two years; (7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/enhancement areas; and (8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful.

Habitat restoration/enhancement will be judged successful when: (1) percent cover and species richness of native species reach 50% of cover and species richness at reference sites; and (2) the replacement vegetation has persisted at least one summer without irrigation.

Annual monitoring reports will be prepared and submitted to CDFG and will be made available to the public to guide future mitigation planning. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; describe success and completion of those efforts and other pertinent site conditions (erosion, trespass, animal damage) in qualitative terms; and describe vegetation survival or establishment in quantitative terms.

BIO-22 a. Newhall Land shall prepare an Oak Resource Management Plan, to be submitted for approval to CDFG and County of Los Angeles, and implemented upon approval. The Plan shall identify areas suitable for oak woodland enhancement and creation. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional measures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and BIO-22d for upland areas).

The Oak Resource Management Plan shall include measures to create or enhance woodlands as follows: (1) locations and acreages of mitigation sites where woodland

creation or enhancement will occur; (2) a description of proposed cover and number of native trees, shrubs, and grasses per acre to be established. This description shall be based on comparable intact woodlands in the area of impact or elsewhere within the RMDP planning area, consistent with conditions of the proposed mitigation site; (3) site preparation measures to include (as appropriate) topsoil treatment, soil decompaction, erosion control, weed grow/kill cycle, or as otherwise approved by the agencies; (4) methods for the removal of non-native plants (*e.g.*, mowing, weeding, raking, herbicide application, or burning); (5) a plant palette listing all species, including sizes, planting densities, or seeding rates, to be based on target vegetation; (6) the source of all plant propagules (*e.g.*, seed, potted nursery stock) and the quantity and species of seed or potted stock of all plants to be introduced or planted into the mitigation areas; (7) temporary irrigation, protection from herbivores, fertilizer, weeding, *etc.*; (8) a schedule and action plan to maintain and monitor the enhancement/restoration areas to include, at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than five years total and no less than two years after removal of irrigation (if any); (9) where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the mitigation areas shall be implemented as needed; (10) tree protection standards to be implemented for individual trees or woodlands adjacent to development activity; (11) success criteria as stated in BIO-22b and BIO-22d; and (12) contingency measures, such as replanting, erosion control, irrigation system repair, or understory re-seeding, to be implemented if habitat improvement/restoration efforts do not meet the success criteria stated in the plan.

b. To meet the minimum mitigation criteria set forth in CLAOTO, Newhall Land will replace impacted oaks (measuring 8 inches in diameter, or greater, or with a combined diameter of 12 inches for multi-stem oaks) at a ratio of 2:1. Additionally, oaks meeting the criteria for classification as a Heritage Tree (defined by CLAOTO as "any oak tree measuring 36 inches or more in diameter") will be replaced at a ratio of 10:1.

Whether they are planted in dedicated open space areas or developed areas, replacement oak trees planted in conformance with CLAOTO shall adhere to the following standards:

1. Replacement oak trees shall be exclusively indigenous species, shall be at least a 15-gallon size specimen, and measure at least one inch in diameter one foot above the base, unless otherwise approved by the County Forester.

2. Replacement trees shall be properly cared for and maintained for a period of two years and replaced by Newhall Land if mortality occurs within that period.

3. Replacement planting shall be conducted in phases as impacts occur. Alternatively, Newhall Land may choose to plant replacement trees in open space areas prior to realization of Project-related impacts (pre-mitigation). Any pre-mitigation shall adhere to the standards outlined herein.

4. Following completion of the two-year maintenance period, the County Forester shall provide final authorization that CLAOTO standards have been met.

c. In addition to the CLAOTO requirements (BIO-22b, above), this EIS/EIR requires replacement of oak trees at the ratios in the table below for trees lost or impacted in uplands. These trees are in addition to the CLAOTO requirement described above. These additional trees may also be incorporated into woodland habitat enhancement or creation, as described above.

Additional replacement ratios are provided in **Table 4.5-70**.

Table 4.5-70
Additional BIO-22c Oak Tree Replacement Ratios

Trunk Diameter*	Mitigation Ratio
8 – 35	0.5:1
36 +	2.5:1

* Trunk diameter measured at 4.5 feet above mean natural grade. Mitigation required for single-stem oaks with a minimum 8-inch diameter and multi-stem oaks with a combined diameter of 12 inches.

d. Newhall will mitigate lost oak woodlands occurring on upland sites (*i.e.*, outside CDFG/Corps jurisdictional stream channels) by creating or enhancing oak woodlands in the Salt Creek area and High Country SMA. At minimum, Newhall Land will mitigate woodland habitat at a 1:1 ratio through creation of new oak woodlands. As an alternative, Newhall Land may choose to enhance, improve, and manage existing degraded woodland areas at a minimum 2:1 ratio for lost woodland acreage.

For woodland enhancement or replacement, dominant species (coast live oak or valley oak) and planting densities will be based on mitigation site suitability. All plant propagules, including acorns or tree cuttings and all seed or potted nursery stock of oaks or other species, shall be collected within a five-mile radius and within 1,000 feet elevation of the restoration site.

The woodland creation or enhancement sites shall be monitored for oak tree survival and vigor and other habitat values, including species diversity and wildlife use. The replacement or enhancement sites will be considered "complete" upon meeting all of the following success criteria, or as otherwise approved by CDFG. Any replacement oak trees planted in woodlands for conformance with CLAOTO will also be subject to CLAOTO performance criteria (BIO-22b).

1. Regardless of the date of initial woodland creation or enhancement, each site must have been without active manipulation by irrigation, planting, or re-seeding for a minimum of three years prior to evaluation for successful completion.

2. The percent cover and species richness of restored or enhanced native vegetation shall be evaluated based on target vegetation described in the woodland creation or enhancement plan.

3. Densities (numbers/acre) of surviving, healthy oak shall be within 5% of the plan target density. Cover and species richness of other native shrubs shall reach 50% of the cover and species richness described for the "target" woodland. Optimal woodland densities and acorn planting quantities, by oak woodland type, are presented in **Table 4.5-71**.

Table 4.5-71
Optimal Woodland Densities and Acorn Planting Quantities, by Oak Woodland Type

Woodland Type	Average Existing Woodland Density (trees per acre)	Target Density for Newhall Land (trees per acre)
Coast live oak woodland	22	50
Mixed oak woodland	19	40
Valley oak woodland	16	25

4. Non-native grass cover shall not exceed the "target" woodland non-native grass cover, and other non-native species shall not exceed 10% cover at any time. Any species listed on the California State Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site at the time that project success is determined.

BIO-23 A final Spineflower Conservation Plan (SCP) shall be adopted and implemented after approval by CDFG, including the permanent dedication of preserves (see draft in Appendix 1.0). The proposed spineflower preserve areas shall be offered to CDFG as a permanent conservation easement within one year after issuance of the requested 2081 Permit to ensure long-term protection. The conservation easement shall be to CDFG and contain appropriate funding and restrictions to help ensure that the spineflower preserve lands are protected in perpetuity.

BIO-24 The spineflower preserves shall be managed by Newhall Land and their preserve manager(s) and/or natural lands management organization(s) (NLMO). Newhall Land shall submit a statement of qualifications for their proposed preserve manager(s)/NLMO(s) for approval by CDFG. Newhall Land will fund in full all

implementation of spineflower preserve management as decribed in the SCP and all mitigation measures listed in this document.

BIO-25 Disturbed portions (*i.e.*, agricultural lands, disturbed lands, and developed lands) of the spineflower preserves, or buffers will be restored through revegetation with native plant communities. In summary, areas that have greater than 30% relative cover by weeds will be restored to have relative cover comparable to that of existing occupied spineflower habitat. In addition, Cal-IPC List A and B plants that are present within the spineflower preserve will be controlled. Restoration and enhancement efforts within the spineflower preserve areas shall be in conformance with the Spineflower Conservation Plan.

BIO-26 In the event that a spineflower preserve, or buffer, or a portion of a spineflower preserve, or buffer burns in a wildfire or suffers from mass movements (*e.g.*, landslides, slope sloughing, or other geologic events), the spineflower preserve manager and Newhall Land shall promptly review the site and determine what action, if any, should be taken. The primary anticipated post-fire spineflower preserve management activity involves monitoring the site and controlling annual weeds that may invade burned areas following a fire event, especially when such weeds (that were not previously present or not present in similar densities) exceed the 30% maximum threshold (see BIO-25). If fire-control lines or other forms of bulldozer damage occur in the spineflower preserves, these areas will be repaired and revegetated to pre-burn conditions or better. An emergency fire response plan will be prepared (in accordance with Mitigation Measure SP-4.6-72) prior to the establishment of the spineflower preserves and approved by CDFG and Los Angeles County Fire Department.

The same methods will be applied to mass-movement, landslide, or slope-sloughing types of events. This measure shall be implemented in conformance with the Spineflower Conservation Plan.

BIO-27 Spineflower preserve temporary fencing shall be shown on construction plans and installed prior to initiating construction clearing and grubbing activities within 200 feet of spineflower preserves, including the buffers. The spineflower preserve manager or a qualified biologist shall monitor fence installation. Clearing for fence installation shall be minimized to what is necessary to install the fence and, where possible, shall leave the roots of native plants in place to allow regrowth. As necessary, native vegetation will be restored and weed management will be performed following fence installation to ensure temporarily cleared native plant areas do not become weed dominated after installation. General Project clearing and grubbing within 200 feet of the fence may commence upon verification by the

spineflower preserve manager or the qualified biologist that protective fencing is in place and is adequate. Appropriate BMPs shall be installed at the edge of development manufactured slopes when the spineflower preserve is within 200 feet and down-slope of proposed development.

BIO-28 Construction documents shall indicate that the grading contractor is responsible for protecting spineflower during construction work. The construction documents shall indicate that the contractor is responsible for informing all employees and subcontractors of the environmentally sensitive areas and the proper conduct of work when working near (*e.g.*, within 100 feet) of these areas. The construction documents shall require a pre-construction meeting to perform an "environmental education session" with the grading contractor/contractor's employees, subcontractors, and equipment operators prior to commencing construction work within 100 feet of the spineflower preserves. The environmental education session shall be conducted by the spineflower preserve manager or a qualified biologist and focus on informing workers of the location and sensitivity of the spineflower and the requirements for protecting it. The construction documents shall indicate that the grading contractor shall be responsible for mitigating any impacts to spineflower due to the negligence of the grading contractor/contractor's employees, subcontractors, or equipment operators. If accidental take occurs during construction, the loss shall be addressed in accordance with the section 2081 Permit issued by CDFG.

BIO-29 Construction plans shall include necessary design features and construction notes to demonstrate consistency of development in the vicinity of spineflower preserves with the Spineflower Conservation Plan (SCP). In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP) shall include minimum BMPs. Together, the implementation of these requirements shall ensure that spineflower populations are protected during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP and noted on construction plans, where appropriate, to avoid impacting spineflower during construction:

- Avoid planting or seeding invasive species in development areas within 200 feet of spineflower preserve areas;
- Do not use erosion control devices that may contain weeds, such as hay bales, *etc.*, within 100 feet of spineflower preserves;
- Do not windrow or stockpile soil along spineflower preserve boundaries;
- Do not locate staging areas, maintenance, or concrete washout areas adjacent to or upstream of spineflower preserves;

- Do not store toxic compounds, including fuel, oil, lubricants, paints, release agents, or any other construction materials that could damage spineflower if spilled near spineflower areas, upstream of spineflower preserves, or along spineflower preserve boundaries;
- Provide location and details for any fencing for temporary and permanent access control along preserve boundaries (per BIO-31 for temporary fencing and BIO-36 for permanent fencing);
- Provide location and details for any dust control fencing along preserve boundaries (per BIO-32); and
- Provide location and details for any stormwater run-on controls/BMPs coming from development area to spineflower preserve (per BIO-38 and BIO-39).

BIO-30 The spineflower preserve manager or qualified biologist shall review construction plans and specifications, SWPPP, and, where appropriate, erosion control plans and implementation of SCAQMD Rule 403d dust control measures (SCAQMD 2005) prior to construction within 200 feet of spineflower preserves for compliance with the Spineflower Conservation Plan and associated permits and Project-related environmental documents.

BIO-31 Spineflower preserves shall be protected prior to clearing and during construction with temporary construction fencing as described in BIO-27. Openings shall be included in the fence when located within wildlife corridors and vegetation community connectivity areas to allow for the safe passage of wildlife. The spineflower preserve manager or a qualified biologist shall indicate the location and width of each of these openings. The fencing shall be three-strand non-barbed wire fence or bright orange U.V. stabilized polyethylene construction "snow" fencing, attached to metal t-posts that extend at least four feet above grade or equivalent. Protective fencing shall be maintained in good condition until completion of Project construction. Where construction activities occur within 200 feet of a spineflower preserve, the spineflower preserve manager or qualified biologist shall review fencing weekly during construction monitoring visits and note any fencing that is in need of repair. Repairs shall be completed within three working days of notification by the spineflower preserve manager or qualified biologist.

BIO-32 Development areas shall have dust control measures implemented and maintained to prevent dust from impacting vegetation within the spineflower preserve areas. Dust control shall be implemented during construction in compliance with SCAQMD Rule 403d (SCAQMD 2005). Where construction activities occur within 100 feet of a spineflower location, chemical dust suppression shall not be utilized. Where determined necessary by the spineflower preserve manager or qualified biologist, a

screening fence (*i.e.*, a six-foot high chain link fence with green fabric up to a height of five feet) shall be installed to protect spineflower locations.

BIO-33 The spineflower preserve manager or qualified biologist shall perform weekly construction monitoring for all construction activities within 200 feet of spineflower preserve areas. The spineflower preserve manager's or qualified biologist's construction monitoring tasks shall include reviewing and approving protective fencing, dust control measures, and erosion control devices before construction work begins; conducting a contractor education session at the preconstruction meeting; and reviewing the site weekly (minimum) during construction to ensure the fencing, dust control, and BMP measures are in place and functioning correctly and that work is not directly or indirectly impacting spineflower plants. Each site visit shall be followed up with a summary monitoring report sent electronically to Newhall Land indicating the status of the site. Monitoring reports shall include remedial recommendations and issue resolution discussions when necessary.

BIO-34 Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within 100 feet of a spineflower preserve shall be reviewed and approved within 30 days by the spineflower preserve manager or qualified biologist and CDFG to ensure that the proposed landscape plants will not naturalize and require maintenance or cause vegetation community degradation in the spineflower preserve and buffer areas. Container plants to be installed within public areas within 200 feet of the spineflower preserves shall be inspected by the spineflower preserve manager or qualified biologist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, for public areas within 200 feet of spineflower preserves, landscape plants shall not be on the Cal-IPC California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants listed in Appendix B of the SCP. The current Cal-IPC list can be obtained from the Cal-IPC web site (http://www.cal-ipc.org/ip/inventory/index.php).

BIO-35 All portions of the spineflower preserves shall be closed, with the exception of pre-identified existing dirt roads and utility easements. The pre-identified existing dirt roads and utility easement access roads shall function as access routes for the spineflower preserve manager, spineflower preserve maintenance personnel, utility personnel, and emergency services vehicles only (*e.g.*, police, fire, and medical) No other vehicle or foot traffic, including nature or recreational trails, will be permitted in the preserve, including the buffer. The dirt roads shall be gated and locked at the outside edges of the buffer zone. Signs discouraging unauthorized access shall be posted. The only persons or entities issued gate keys shall be the spineflower

preserve managers and their employees, easement holding utility companies, emergency services, Newhall Land, and CDFG.

BIO-36 Fencing shall be installed along the outside edge of the spineflower preserve and buffer areas adjacent to proposed developments, parks, golf courses, or other "active land uses" to prevent unauthorized access. Specific areas that are adequately protected by steep terrain (1.5:1 or steeper) and/or dense vegetation may not require fencing but would require signage. The determination of the need for fencing in these areas shall be subject to the approval of the spineflower preserve manager or qualified biologist. If monitoring determines that slope and/or vegetation is not effective at deterring unauthorized access, additional fencing may be required by the spineflower preserve manager or qualified biologist. Fencing is not required in areas bordered by large parcels of conserved natural open space areas or the Santa Clara River riparian corridor, as installing fencing in these areas would be unnecessary and damaging to existing vegetation and wildlife corridors.

Fencing must extend a minimum of four feet above grade and include wood-doweled split rail fencing, exterior grade heavy-duty vinyl three-railed fencing, three-strand non-barbed wire, or similar. Fencing installed adjacent to native vegetation communities and natural open space areas will allow for the passage of animals.

BIO-37 Outdoor all-weather signs measuring approximately 12 by 16 inches shall be posted on all spineflower preserve access gates and along spineflower preserve fencing at approximately 800 feet on center, except adjacent to road crossings, where signs will be posted. The placement will take topography into account, emphasizing placement on ridgelines where signs will be visible to emergency fire personnel and others. Signs shall state in English and Spanish that the area is a biological preserve that hosts a state-listed endangered and federal candidate plant species and that trespassing is prohibited (in accordance Mitigation Measure SP-4.6-68). Signs shall indicate that fuel modification and management work is not allowed within the spineflower preserve or buffer areas. Signage at any trailheads near spineflower preserves shall describe the spineflower preserve, its purpose, and the applicable restrictions regarding spineflower conservation. The signage shall state that people who do not abide by these rules or who damage the protected species will be subject to prosecution, including fines and/or imprisonment. All signage shall include emergency contact information and shall be reviewed and approved by the spineflower preserve manager or qualified biologist.

BIO-38 Storm drain outfalls from proposed development areas shall only be installed uphill from spineflower preserve areas where necessary to retain pre-construction hydrological conditions within the spineflower preserves, sustain existing riparian and wetland vegetation communities, and/or allow for the restoration of currently disturbed

areas to native riparian/alluvial vegetation communities. When located in a spineflower preserve area, storm drains must meet the following criteria:

- Storm drains must not impact spineflower either directly or indirectly;
- Storm drains may only daylight at the bottom of slopes within spineflower preserve areas; and
- Under no circumstances shall storm drains daylight onto steeply sloped areas or other areas that would cause erosion.

BIO-39 Any surface water entering a spineflower preserve area from development areas is required to pass through BMP measures, which will be described in the SWPPP. Storm drain outlets must contain adequate energy dissipaters to prevent downstream erosion and stream channel down-cutting. Additionally, storm drain outlets must be designed based on pre- and post-construction hydrological studies (in accordance with Mitigation Measure SP-4.6-69). Storm drains and permanent structural BMPs shall be designed by a licensed civil engineer. Requirements of BIO-29 and BIO-38, where applicable, shall be incorporated into the facility design and shall be subject to approval by the spineflower manager or qualified biologist. Long-term maintenance of storm drain BMPs will be the responsibility of the designated maintenance entity.

BIO-40 The Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I) shall be revised and submitted to CDFG for review and approval prior to ground disturbance to occupied habitat. Upon approval, the plan will be implemented by the applicant or its designee. The revised plan will demonstrate the feasibility of enhancing or restoring slender mariposa lily habitat in selected areas to be managed as natural open space (*i.e.*, the Salt Creek area or High Country SMA, spineflower preserves, or River Corridor SMA) without conflicting with other resource management objectives. Habitat replacement/enhancement will be at a 1:1 ratio (acres restored/enhanced to acres impacted).

The revised plan will describe habitat improvement/restoration measures to be completed prior to introducing slender mariposa lily. Habitat improvement/restoration will be based on native occupied slender mariposa lily habitat. The revised plan will specify: (1) the location of mitigation sites (may be selected from among 559 acres of suitable mitigation land in the High Country SMA and Salt Creek area identified in the Draft Newhall Ranch Mitigation Feasibility Study (Dudek 2007A); (2) a description of "target" vegetation (native shrubland or grassland) to include estimated cover and abundance of native shrubs and grasses in occupied slender mariposa lily habitat on Newhall Ranch land (either at sites to be destroyed by construction or at sites to be preserved); (3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as

appropriate; (4) methods for the removal of non-native plants (*e.g.*, mowing, weeding, raking, herbicide application, or burning); (5) the source of all plant propagules (seed, potted nursery stock, *etc.*), the quantity and species of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; (6) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than two years; (7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/enhancement areas; and (8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful.

Habitat restoration/enhancement will be judged successful when (1) percent cover and species richness of native species reach 50% of their cover and species richness at undisturbed occupied slender mariposa lily habitat at reference sites; and (2) the replacement vegetation has persisted at least one summer without irrigation. At that point slender mariposa lily propagules (seed or bulbs) will be introduced onto the site.

The revised plan will specify methods to collect propagules and introduce slender mariposa lily into these mitigation sites. Introductions will use source material (seeds or bulbs) from no more than 1.0 mile distant, similar slope exposures, and no more than 500 ft. elevational difference from the mitigation site, unless otherwise approved by CDFG. Bulbs may be salvaged and transplanted from slender mariposa lily occurrences to be lost; alternately, seed may be collected from protected occurrences, following CDFG-approved seed collection guidelines (*i.e.*, MOU for rare plant seed collection). Newhall Land or its designee will monitor the reintroduction sites for no fewer than five additional years to estimate slender mariposa lily survivorship (for bulbs) or seedling establishment (for seeded sites).

Annual monitoring reports will be prepared and submitted to CDFG and will be made available to the public to guide future mitigation planning for slender mariposa lily. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; describe success and completion of those efforts and other pertinent site conditions (erosion, trespass, animal damage) in qualitative terms; and describe mariposa lily survival or establishment in quantitative terms.

A minimum of 133 acres of slender mariposa lily cumulative occupied area will be conserved and managed in the RMDP and SCP Project boundaries. Of these 133 acres, approximately 103 acres of slender mariposa lily cumulative occupied area will be conserved and managed in the RMDP and SCP Project boundary in the High Country

SMA and Salt Creek area, and two acres occur within the River Corridor SMA and/or proposed spineflower preserves. Additional cumulative occupied area will be conserved and managed in the San Martinez Grande Canyon area at a 1:1 ratio (acres conserved and managed to acres impacted) based on impacts to cumulative occupied area within the Entrada planning area, as a means to ensure regional biodiversity of the species. Up to an additional 28 acres of slender mariposa lily cumulative occupied area can be conserved and managed in the San Martinez Grande Canyon area for this purpose.

BIO-41 Thirty days prior to construction activities in grassland, scrub, chaparral, oak woodland, riverbank, and agriculture habitats, or other suitable habitat a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for American badger.

If American badgers are present, occupied habitat shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den. Maternity dens shall be avoided during the pup-rearing season (February 15 through July 1) and a minimum 200 foot buffer established. This buffer may be reduced based on the location of the den upon consultation with CDFG. Maternity dens shall be flagged for avoidance, identified on construction maps, and a qualified biologist shall be present during construction. If avoidance of a non-maternity den is not feasible, badgers shall be relocated either by trapping or by slowly excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more that four inches at a time) before or after the rearing season (February 15 through July 1). Any relocation of badgers shall occur only after consultation with CDFG. A written report documenting the badger removal shall be provided to CDFG within 30 days of relocation.

Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.

BIO-42 All oaks that will not be removed that are regulated under CLAOTO with driplines within 50 feet of land clearing (including brush clearing) or areas to be graded shall be enclosed in a temporary fenced zone for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone (*i.e.*, the area at least 15 feet from the trunk or five feet beyond the drip line, whichever distance is greater). No parking or storage of equipment, solvents, or chemicals that could adversely affect the trees shall be allowed within 25 feet of the trunk at any time. Removal of the fence shall occur only after the Project arborist or qualified biologist confirms the health of preserved trees.

BIO-43 Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities that result in any

disturbance to the banks or wetted channel, aquatic habitats within construction sites and access roads, as well as all aquatic habitats within 300 feet of construction sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps and CDFG shall be notified at least 14 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any construction work in the riverbed. If there is evidence that fish spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by USFWS. If surveys determine that gravid fish are present, that spawning has recently occurred, or that juvenile fish are present in the proposed construction areas, all activities within aquatic habitat will be suspended. Construction within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area.

BIO-44 Temporary bridges, culvert crossings, or other feasible methods of providing access across the river shall be constructed outside of the winter season and not during periods when spawning is occurring. Prior to the construction of any temporary or permanent crossing of the Santa Clara River, the applicant shall develop a Stream Crossing and Diversion Plan. The plan shall include the following elements: the timing and methods for pre-construction aquatic species surveys; a detailed description of the diversion methods (*e.g.*, berms shall be constructed of on-site alluvium materials of low silt content, inflatable dams, sand bags, or other approved materials); special-status species relocation; fish exclusion techniques, including the use of block netting and fish relocation; methods to maintain fish passage during construction; channel habitat enhancement, including the placement of vegetation, rocks, and boulders to produce riffle habitat; fish stranding surveys; and the techniques for the removal of crossings prior to winter storm flows. The Plan shall be submitted to the USFWS and CDFG for approval at least 30 days prior to implementation.

If adult special-status fishes are present and spawning has not occurred, they shall be relocated prior to the diversion or crossing. Block nets of 1/8-inch woven mesh will be set upstream and downstream. On days with possible high temperature or low humidity (temperatures in excess of 80° F), work will be done in the early morning hours, as soon as sufficient light is available, to avoid exposing fishes to high temperatures and/or low humidity. If high temperatures are present, the fishes will be herded to downstream areas past the block net. Once the fishes have been excluded by herding, a USFWS staff member or his or her agents shall inspect the site for remaining or stranded fish. A USFWS staff member or his or her agents shall relocate the fish to suitable habitat outside the Project area (including those areas potentially subject to high turbidity). During the diversion/relocation of fishes, the USFWS or his or her agents shall be present at all times.

BIO-45 a. **Stream diversion bypass channels**:

Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/USFWS. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS.

The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/USFWS, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (*i.e.*, boulders, large logs, or other CDFG/USFWS-approved materials) placed in the channel at the point of each curve (*i.e.*, on alternating sides of the channel). If emergent aquatic vegetation is present in the original channel, the applicant will transplant suitable vegetation into the diversion channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area.

Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed construction areas.

At the conclusion of the diversion, either at the commencement of the winter season, or the completion of construction, the applicant will coordinate with CDFG/USFWS to determine if the diversion should be left in place or the stream returned to the original channel. If CDFG/USFWS determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (*i.e.*, while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (*i.e.*, boulders, large logs, or other CDFG/USFWS-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place.

b. **Dewatering:**

Construction dewatering in close proximity to stream flow shall implement the following:

- Assess local stream and groundwater conditions, including flow depths, groundwater elevations, and anticipated dewatering cone of influence (radius of draw down).

- Assess surface water elevations upstream, adjacent to, and downstream of the extraction points, to assess any critical flow regimes susceptible to excessive draw down and therefore fish stranding issues.

- Assess surface water elevations downstream of the discharge locations (if discharge is proposed to the flowing stream) to assess any flow regimes and overbank areas that may be susceptible to flooding and therefore fish stranding at the cessation of discharge. Discharge locations shall also be assessed for potential channel bed erosion from dewatering discharge, and appropriate BMPs must be implemented to prevent excessive erosion or turbidity in the discharge.

- The information above shall be summarized and provided in a plan approved by CDFG and Corps.

- Fish shall be excluded from any artificial flowing channels from dewatering discharge. Methods to ensure separation may include, but are not limited to: block netting at the confluence; creation of a physical drop greater than four inches at the confluence; or maintaining a velocity range unsuitable for fish passage, such as a berm at the confluence with small diameter pipes for discharge.

BIO-46 During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless USFWS personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and USFWS within 24 hours.

BIO-47 Slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area to provide refuge for special-status fishes during construction. Where feasible and in consultation with CDFG and USFWS, the applicant shall enhance slow-moving water habitats for each linear foot disturbed by hand-excavating shallow side channels and placing multiple sets of obstructions (*e.g.*, boulders, large logs, or other CDFG- and USFWS-approved materials) in the channel.

BIO-48 Installation of bridges, culverts, or other structures shall not impair the movement of fish and aquatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert

crossings shall include provisions for a low flow channel where velocities are less than two feet per second to allow fish passage.

BIO-49 Water containing mud, silt, or other pollutants from construction activities shall not be allowed to enter a flowing stream or be placed in locations that may be subject to normal storm flows during periods when storm flows can reasonably be expected to occur.

BIO-50 Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 500 feet of construction sites and access roads shall be surveyed at the appropriate season for southwestern pond turtle. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and June 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. The applicant shall develop a Plan to address the relocation of southwestern pond turtle. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for this species; identify the locations where more intensive efforts should be conducted; identify the habitat and conditions in the proposed relocation site(s); the methods that would be utilized for trapping and relocating individuals; and provide for the documentation/recordation of the numbers of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities within potentially occupied habitat.

If southwestern pond turtles are detected in or adjacent to the Project, nesting surveys shall be conducted. Focused surveys for evidence of southwestern pond turtle nesting shall be conducted in, or adjacent to, the Project when suitable nesting habitat exists within 1,300 feet of occupied habitat in an area where Project-related ground disturbance will occur (*e.g.*, development, ground disturbance). If both of those conditions are met, a qualified biologist shall conduct focused, systematic surveys for southwestern pond turtle nesting sites. The survey area shall include all suitable nesting habitat within 1,300 feet of occupied habitat in which Project-related ground disturbance will occur. This area may be adjusted based on the existing topographical features on a case-by-case basis with the approval of CDFG. Surveys will entail searching for evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest depredation.

If a southwestern pond turtle nesting area would be adversely impacted by construction activities, the applicant shall avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist shall coordinate with CDFG to

identify if it is possible to relocate the pond turtles. Eggs or hatchlings shall not be moved without written authorization from CDFG.

The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of southwestern pond turtle. Clearance surveys for pond turtles shall be conducted within 500 feet of potential habitat by the authorized biologist prior to the initiation of construction each day. The resume of the proposed biologist will be provided to CDFG for approval prior to conducting the surveys.

BIO-51 Bridges over the Santa Clara River shall be designed to minimize impacts to natural areas and riparian resources from associated lighting and stormwater runoff. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bollard lights, or other available light and glare minimization methods. Bridges will be designed to minimize normal vehicular lighting from trespassing into natural areas using side walls a minimum of 24 inches high. All stormwater from the bridges will be directed to water treatment facilities for water quality treatment.

BIO-52 Prior to grading and construction activities, a qualified biologist shall be retained to conduct a Worker Environmental Awareness Program (WEAP) for all construction/contractor personnel. A list of construction personnel who have completed training prior to the start of construction shall be maintained on site and this list shall be updated as required when new personnel start work. No construction worker may work in the field for more than five days without participating in the WEAP. The qualified biologist shall provide ongoing guidance to construction personnel and contractors to ensure compliance with environmental/permit regulations and mitigation measures. The qualified biologist shall perform the following:

- Provide training materials and briefings to all personnel working on site. The material shall include but not be limited to the identification and status of plant and wildlife species, significant natural plant community habitats (*e.g.*, riparian), fire protection measures, and review of mitigation requirements.
- A discussion of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, other state or federal permit requirements and the legal consequences of non-compliance with these acts;
- Attend the pre-construction meeting to ensure that timing/location of construction activities do not conflict with other mitigation requirements (*e.g.*, seasonal surveys for nesting birds, pre-construction surveys, or relocation efforts);
- Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas. Maps showing

the location of special-status wildlife or populations of rare plants, exclusion areas, or other construction limitations (*e.g.*, limitations on nighttime work) will be provided to the environmental monitors and construction crews prior to ground disturbance;

- Discuss procedures for minimizing harm to or harassment of wildlife encountered during construction and provide a contact person in the event of the discovery of dead or injured wildlife;
- Review/designate the construction area in the field with the contractor in accordance with the final grading plan;
- Ensure that haul roads, access roads, and on-site staging and storage areas are sited within grading areas to minimize degradation of vegetation communities adjacent to these areas (if activities outside these limits are necessary, they shall be evaluated by the biologist to ensure that no special-status species habitats will be affected);
- Conduct a field review of the staking (to be set by the surveyor) designating the limits of all construction activity;
- Flag or temporarily fence any construction activity areas immediately adjacent to riparian areas;
- Ensure and document that required pre-construction surveys and/or relocation efforts have been implemented;
- Be present during initial vegetation clearing and grading; and
- Submit to CDFG an immediate report (within 72 hours) of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-53 Prior to the issuance of a grading permit for ground disturbance, construction, or site preparation activities, the applicant shall retain the services of a qualified biologist to conduct pre-construction surveys for western spadefoot toad within all portions of the Project site containing suitable breeding habitat. Surveys shall be conducted during a time of year when the species could be detected (*e.g.*, the presence of rain pools). If western spadefoot toad is identified on the Project site, the following measures will be implemented.

(1) Under the direct supervision of the qualified biologist, western spadefoot toad habitat shall be created within suitable natural sites on the Specific Plan site outside the proposed development envelope. The amount of occupied breeding habitat to be impacted by the Project shall be replaced at a 2:1 ratio. The actual relocation site design and location shall be approved by CDFG. The location shall be in suitable habitat as far away as feasible from any of the homes and

roads to be built. The relocation ponds shall be designed such that they only support standing water for several weeks following seasonal rains in order that aquatic predators (*e.g.*, fish, bullfrogs, and crayfish) cannot become established. Terrestrial habitat surrounding the proposed relocation site shall be as similar in type, aspect, and density to the location of the existing ponds as feasible. No site preparation or construction activities shall be permitted in the vicinity of the currently occupied ponds until the design and construction of the pool habitat in preserved areas of the site has been completed and all western spadefoot toad adults, tadpoles, and egg masses detected are moved to the created pool habitat.

(2) Based on appropriate rainfall and temperatures, generally between the months of February and April, the biologist shall conduct pre-construction surveys in all appropriate vegetation communities within the development envelope. Surveys will include evaluation of all previously documented occupied areas and a reconnaissance-level survey of the remaining natural areas of the site. All western spadefoot adults, tadpoles, and egg masses encountered shall be collected and released in the identified/created relocation ponds described above.

(3) The qualified biologist shall monitor the relocation site for five years, involving annual monitoring during and immediately following peak breeding season such that surveys can be conducted for adults as well as for egg masses and larval and post-larval toads. Further, survey data will be provided to CDFG by the monitoring biologist following each monitoring period and a written report summarizing the monitoring results will be provided to CDFG at the end of the monitoring effort. Success criteria for the monitoring program shall include verifiable evidence of toad reproduction at the relocation site.

BIO-54 Prior to construction the applicant shall develop a relocation plan for coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for each species; identify the locations where more intensive efforts should be conducted; identify the habitat and conditions in the proposed relocation site(s); the methods that would be utilized for trapping and relocating the individual species; and provide for the documentation/recordation of the species and number of the animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground disturbing activities within potentially occupied habitat.

The Plan shall include the specific survey and relocation efforts that would occur for construction activities that occur both during the activity period of the special status species (generally March to November) and for periods when the species may be present in the work area but difficult to detect due to weather conditions (generally

December through February). Thirty days prior to construction activities in coastal scrub, chaparral, oak woodland, riparian habitats, or other areas supporting these species qualified biologists shall conduct surveys to capture and relocate individual coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake in order to avoid or minimize take of these special-status species. The plan shall require a minimum of three (3) surveys conducted during the time of year/day when each species is most likely to be observed. Individuals shall be relocated to nearby undisturbed areas with suitable habitat. If construction is scheduled to occur during the low activity period (generally December through February) the surveys shall be conducted prior to this period if possible and exclusion fencing shall be placed to limit the potential for re-colonization of the site prior to construction. The qualified biologist will be present during ground-disturbing activities immediately adjacent to or within habitat that supports populations of these species. Clearance surveys for special-status reptiles shall be conducted by a qualified biologist prior to the initiation of construction each day.

Results of the surveys and relocation efforts shall be provided to CDFG in the annual mitigation status report. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.

BIO-55 a. As a supplement to BIO-1 through BIO-16, additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo will be provided for certain key habitat zones at higher ratios (identified as "key population areas" in **Figure 4.5-86**, Alternative 2 Impacts to Least Bell's Vireo Habitat). Southern willow scrub, southern cottonwood–willow riparian, arrow weed scrub, mulefat scrub, and Mexican elderberry scrub and woodland that provide nesting/foraging habitat for least Bell's vireo in "key population areas" shall be replaced or enhanced. All permanent loss to nesting/foraging habitat in key population areas shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss of foraging/nesting habitat in key population areas shall be mitigated at a 2:1 ratio. The requirements for replacing habitat by either creating new habitat or removing exotic species from existing habitat shall follow the procedures outlined in BIO-1 through BIO-16. To replace the lost functions of habitat located adjacent to the Santa Clara River due to noise impacts, all nesting/foraging habitat within the 60 dBA sound contour (associated with development site roadway improvements) shall be considered degraded. Nesting/foraging habitat within this area shall be mitigated at a ratio of 2:1.

b. The loss of documented occupied nesting habitat for coastal California gnatcatcher shall be mitigated. If the coastal California gnatcatcher is identified nesting on site, the applicant will acquire or preserve nesting coastal California gnatcatcher habitat at a 3:1 ratio for impacts to documented occupied habitat, or by the ratio specified in BIO-2,

whichever is greater. Mitigation acquisition shall occur at an agreed-upon location as approved by the USFWS upon consultation. The applicant shall enter into a binding legal agreement regarding the preservation of occupied habitat describing the terms of the acquisition, enhancement, and management of those lands.

BIO-56 Within 30 days of ground-disturbing activities associated with construction or grading that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March through August in the Project region, or as determined by a qualified biologist), the applicant shall have weekly surveys conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the disturbance zone or within 300 feet (500 feet for raptors) of the disturbance zone. Pre-construction surveys shall include nighttime surveys to identify active rookery sites. The surveys shall continue on a weekly basis, with the last survey being conducted no more than seven days prior to initiation of disturbance work. If ground-disturbing activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than seven days will have elapsed between the survey and ground-disturbing activities.

If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted, at the discretion of the biologist in consultation with CDFG, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In the event that golden eagles establish an active nest in the River Corridor SMA, the buffers will be established in consultation with CDFG. Potential golden eagle nesting will be reported to CDFG within 24 hours. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFG in the annual mitigation status report.

For listed riparian songbirds (least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo) USFWS protocol surveys shall be conducted. If active nests are found, clearing and construction within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFG and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. If no active nests are observed, construction may proceed. If active nests are found, work may proceed provided that construction activity is located at least 300 feet from active nests (or as authorized through the

context of the Biological Opinion and 2081b Incidental Take Permit). This buffer may be adjusted provided noise levels do not exceed 60 dBA hourly Leq at the edge of the nest site as determined by a qualified biologist in coordination with a qualified acoustician.

If the noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dBA Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to CDFG and USFWS.

For coastal California gnatcatcher, the applicant shall conduct USFWS protocol surveys in suitable habitat within the Project area and all areas within 500 feet of access or construction-related disturbance areas. Suitable habitats, according to the protocol, include "coastal sage scrub, alluvial fan, chaparral, or intermixed or adjacent areas of grassland and riparian habitats." A permitted biologist shall perform these surveys according to the USFWS' (1997a) Coastal California Gnatcatcher Presence/Absence Survey Guidelines. If a territory or nest is confirmed, the USFWS and CDFG shall be notified immediately. If present, a 500-foot disturbance-free buffer shall be established and demarcated by fencing or flagging. No Project activities may occur in these areas unless otherwise authorized by USFWS and CDFG. Construction activities in suitable gnatcatcher habitat will be monitored by a full-time qualified biologist. The monitoring shall be of a sufficient intensity to ensure that the biologist could detect the presence of a bird in the construction area.

BIO-57 Thirty days prior to construction activities, a qualified biologist shall conduct CDFG protocol surveys to determine whether the burrowing owl is present at the site. The surveys shall consist of three site visits and shall be conducted in areas dominated by field crops, disturbed habitat, grasslands, and along levee locations, or if such habitats occur within 500 feet of a construction zone. If located, occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If the

burrowing owl is detected but nesting is not occurring, construction work can proceed after any owls have been evacuated from the site using CDFG-approved burrow closure procedures and after alternative nest sites have been provided in accordance with the CDFG Staff Report on Burrowing Owl Mitigation (10-17-95).

Unless otherwise authorized by CDFG, a 500-foot buffer, within which no activity will be permissible, will be maintained between Project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.

Results of the surveys and relocation efforts shall be provided to CDFG in the annual mitigation status report.

BIO-58 Thirty days prior to construction activities in grassland, scrub, chaparral, oak woodland, riverbank, and agriculture habitats, or other suitable habitat a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for San Diego black-tailed jackrabbit and San Diego desert woodrat.

If San Diego black-tailed jackrabbits are present, non-breeding rabbits shall be flushed from areas to be disturbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged and ground-disturbing activities avoided within a minimum of 200 feet during the pup-rearing season (February 15 through July 1). This buffer may be reduced based on the location of the den upon consultation with CDFG. Occupied maternity dens, depressions, nests, or burrows shall be flagged for avoidance, and a biological monitor shall be present during construction. If unattended young are discovered, they shall be relocated to suitable habitat by a qualified biologist. The applicant shall document all San Diego black-tailed jackrabbit identified, avoided, or moved and provide a written report to CDFG within 72 hours. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.

If active San Diego desert woodrat nests (stick houses) are identified within the disturbance zone or within 100 feet of the disturbance zone, a fence shall be erected around the nest site adequate to provide the woodrat sufficient foraging habitat at the discretion of the qualified biologist in consultation with CDFG. Clearing and construction within the fenced area will be postponed or halted until young have left the nest. The biologist shall serve as a construction monitor during those periods when disturbance activities will occur near active nest areas to ensure that no inadvertent impacts to these nests will occur. If avoidance is not possible, the applicant will take the following sequential steps: (1) all understory vegetation will be cleared in the area immediately surrounding active nests followed by a period of one night without further

disturbance to allow woodrats to vacate the nest, (2) each occupied nest will then be disturbed by a qualified wildlife biologist until all woodrats leave the nest and seek refuge off site, and (3) the nest sticks shall be removed from the Project site and piled at the base of a nearby hardwood tree (preferably a coast live oak or California walnut). Relocated nests shall not be spaced closer than 100 feet apart, unless a qualified wildlife biologist has determined that a specific habitat can support a higher density of nests. The applicant shall document all woodrat nests moved and provide a written report to CDFG.

All woodrat relocation shall be conducted by a qualified biologist in possession of a scientific collecting permit.

BIO-59 Road undercrossings will be built in accordance with accepted design criteria to allow the passage of mountain lions and mule deer. The applicant shall prepare a Wildlife Movement Corridor Plan that specifically addresses wildlife movement corridors at San Martinez Grande, Chiquito Canyon, and Castaic Creek, which shall be monitored for one year prior to construction of the SR-126 widenings. The Plan shall address current movement that is occurring, the methods that will be implemented to provide for passage, including lighting, fencing, vegetation planting, the installation of bubblers to encourage wildlife usage, and the size of the passage. The applicant shall install motion cameras at these locations in consultation with CDFG and monitor these passages for a period of two years subsequent to constructing improvements. A report of the wildlife documented to utilize these crossings shall be provided to CDFG annually. In addition, the Salt Creek crossing west of the Project area will be enhanced prior to initiation of construction in Long Canyon (southern portion of the Homestead Village). This crossing will be monitored for one year at the initiation of RMDP development, for two years at the time the crossing is enhanced, and then for three years after Project build-out. Prior to the construction of adjacent developments, signs will be placed along the roads indicating potential wildlife crossings where mountain lions and mule deer are likely to cross.

BIO-60 Thirty days prior to construction activities, a qualified biologist shall conduct a pre-construction survey for mountain lion natal dens. The survey area shall include the construction footprint and the area within 2,000 feet of the Project disturbance boundaries. Should an active natal den be located, the applicant shall cease work within 2000 feet and inform CDFG with 24 hours. No construction activities shall occur in the 2000 foot buffer until a qualified biologist in consultation with CDFG establishes an appropriate setback from the den that would not adversely affect the successful rearing of the cubs. No construction activities or human intrusion shall occur within the established setback until the cubs have been successfully reared or the cats have left the area.

BIO-61 No earlier than 30 days prior to the commencement of construction activities, a pre-construction survey shall be conducted by a qualified biologist to determine if active roosts of special-status bats are present on or within 300 feet of the Project disturbance boundaries. Should an active maternity roost be identified (in California, the breeding season of native bat species is generally from April 1 through August 31), the roost shall not be disturbed and construction within 300 feet shall be postponed or halted, until the roost is vacated and juveniles have fledged. Surveys shall include rocky outcrops, caves, structures, and large trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). Trees and rocky outcrops shall be surveyed by a qualified bat biologist (*i.e.*, a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle bats). If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (*i.e.*, not removed) by the Project. If avoidance of the maternity roost must occur, the bat biologist shall survey (through the use of radio telemetry or other CDFG approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of CDFG that there are alternative roost sites used by the maternity colony and young are not present then no further action is required.

If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Large concrete walls (*e.g.*, on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative potential roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. CDFG shall also be notified of any hibernacula or active nurseries within the construction zone.

If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (*e.g.*, installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist in consultation with CDFG shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the

darker hours, and the roost tree shall be removed or the grading shall occur the next day (*i.e.*, there shall be no less or more than one night between initial disturbance and the grading or tree removal). These actions should allow bats to leave during nighttime hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

If an active maternity roost is located on the Project site, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (*i.e.*, prior to March 1) or after young are flying (*i.e.*, after July 31) using the exclusion techniques described above.

BIO-62 At least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO in fee and/or by conservation easement. These 1,900 acres of the Open Area will be left as natural vegetation. Dedication of open areas lands shall be reported annually to CDFG.

BIO-63 Each tract map Home Owners' Association shall supply educational information to future residents regarding pets, wildlife, and open space areas. The material shall discuss the presence of native animals (*e.g.*, coyote, bobcat, and mountain lion), indicate that those native animals could prey on pets, indicate that no actions shall be taken against native animals should they prey on pets allowed outdoors, and indicate that pets must be leashed while using the designated trail system and/or in any areas within or adjacent to open space. Control of stray and feral cats and dogs will be conducted in open space areas on an as-needed basis by the NLMO(s) or the Newhall Ranch JPA managing the River Corridor SMA, High Country SMA, or Salt Creek area or by the HOAs managing the Open Areas. Feral cats and dogs may be trapped and deposited with the local Society for the Prevention of Cruelty to Animals or the Los Angeles County Department of Animal Control.

BIO-64 An integrated pest management (IPM) plan that addresses the use of pesticides (including rodenticides and insecticides) on site will be prepared prior to the issuance of building permits for the initial tract map. Preparation of the CC&Rs for each tract map shall include language that prohibits the use of anticoagulant rodenticides in the Project site.

BIO-65 Pre-construction surveys for San Emigdio blue butterfly shall occur in all areas containing host plants in sufficient density to support this species. A qualified Lepidoptera biologist shall conduct focused surveys at a time of year and during weather conditions when the detection of eggs, larvae, or adults is possible. All occupied habitat shall be mapped and the locations provided to CDFG. Should the removal of quail brush or other documented host plants from occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas be required, the plants shall be

removed when eggs and larvae are not present (*i.e.*, mid-September to March). Removal of quail brush plants from the documented habitat in Potrero Canyon may only be conducted from April through early September if it is determined by a qualified biologist that eggs and/or larvae are not present on the plants to be removed.

BIO-66 The removal of quail brush or other documented host plants from any occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas shall be replaced at a minimum of a 1.5:1 ratio. The replacement plants shall be planted contiguous to the existing quail brush plants associated with the San Emigdio blue butterfly habitat. The success of the replanting shall be monitored for survival and vigor consistent with survivorship requirements of Mitigation Measure BIO-6 and BIO-7.

BIO-67 Prior to any construction activities occurring within 200 feet of any occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas, the boundaries of preserved areas of the habitat shall be clearly marked with flagging. The flagging would serve to identify the boundaries of the habitat to construction personnel and to prevent the inadvertent construction-related loss of quail brush or other host plants associated with the habitat. Construction personnel working in the area shall be informed that the removal of or damage to any flagged quail brush or other host plants located outside the disturbance footprint is prohibited.

BIO-68 Any special-status species bat day roost sites found by a qualified biologist during pre-construction surveys conducted per BIO-61, to be directly (within project disturbance footprint) or indirectly (within 300 feet of project disturbance footprint) impacted are to be mitigated with creation of artificial roost sites. The Project applicant shall establish (an) alternative roost site(s) within suitable preserved open space located at an adequate distance from sources of human disturbance.

BIO-69 The Project applicant and/or NLMO shall develop and implement a conservation education and citizen awareness program for the High Country SMA informing the public of the special-status resources present within the High Country SMA and providing information on common threats posed by the presence of people and pets to those resources. The NLMO shall install trailhead and trail signage indicating the High Country SMA is a biological conservation area and requesting that people and their animals stay on existing trails at all times. The NLMO shall provide quarterly maintenance patrols to remove litter and monitor trail expansion and fire hazards within the High Country SMA, funded by the JPA.

BIO-70 Construction plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction. In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the

Project stormwater pollution prevention plan (SWPPP) shall include the following minimum BMPs. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP, and noted on construction plans where appropriate, to avoid impacting special-status species during construction:

- Avoid planting or seeding invasive species in development areas within 200 feet of native vegetation communities.
- Provide location and details for any dust control fencing along Project boundaries (BIO-71).
- Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the 404 Permit or 1603 Agreement.
- Silt settling basins installed during the construction process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes.
- If a stream channel has been altered during the construction and/or maintenance operations, its low flow channel shall be returned as nearly as practical to pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre-Project grade, to the extent practical, unless it represents a wetland restoration area.
- Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.
- Staging/storage areas for construction equipment and materials shall be located outside of the ordinary high water mark.
- Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water.
- Stationary equipment such as motors, pumps, generators, and welders which may be located within the riverbed construction zone shall be positioned over drip pans. No fuel storage tanks shall be allowed in the riverbed.
- No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any construction, or

associated activity of whatever nature, shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the permit. When construction operations are completed, any excess materials or debris shall be removed from the work area.

- No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow.
- The operator shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.
- The operator shall not permit pets on or adjacent to the construction site.
- No guns or other weapons are allowed on the construction site during construction, with the exception of the security personnel and only for security functions. No hunting shall be authorized/permitted during construction.

BIO-71 Development areas shall have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where construction activities occur within 100 feet of known special-status plant species locations, chemical dust suppression shall not be utilized. Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations. See BIO-32 for dust control requirements related to spineflower preserves.

BIO-72 Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within 100 feet of native vegetation communities shall be reviewed by a qualified restoration specialist to ensure that the proposed landscape plants will not naturalize and require maintenance or cause vegetation community degradation in the open space areas (River Corridor SMA, High Country SMA, Salt Creek area, and natural portions of the Open Area). Container plants to be installed within public areas within 100 feet of the open space areas shall be inspected by a qualified restoration specialist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, landscape plants within 100 feet of native vegetation communities shall not be on the Cal-IPC California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants listed in Appendix B of the SCP. The current Cal-IPC list can be obtained from the Cal-IPC web site (http://www.cal-ipc.org/ip/inventory/index.php). Landscape plans will include a plant

palette composed of native or non-native, non-invasive species that do not require high irrigation rates. Except as required for fuel modification, irrigation of perimeter landscaping shall be limited to temporary irrigation (*i.e.*, until plants become established).

BIO-73 Permanent fencing shall be installed along all River Corridor SMA trails adjacent to the Santa Clara River, or other sensitive resources, in order to minimize impacts associated with increased human presence on protected vegetation communities and special-status plant and wildlife species. The fencing will be split rail to avoid inhibiting wildlife movement. Viewing platforms will be located in land covers currently mapped as agriculture, disturbed land, or developed land.

BIO-74 To protect Middle Canyon Spring and to reduce potential direct impacts to any special-status species that may be located within the spring complex due to unrestricted access, the Project applicant or its designee shall avoid all construction-related activities within the Middle Canyon Spring complex and erect and maintain temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to and during all phases of construction within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris, or anything associated with construction activities. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring.

Following the final phase of construction of any Newhall Ranch subdivision tract adjacent to Middle Canyon Spring, the Project applicant or its designee shall install and maintain permanent fencing along the subdivision tract bordering the spring. Permanent signage shall be installed on the fencing along the spring boundary to indicate that the fenced area is a biological preserve that contains protected species and habitat. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

a. As described in BIO-51, the Commerce Center Drive Bridge will be designed to minimize secondary impacts associated with lighting and water quality impacts through the installation of indirect and downcast lighting, and routing of stormwater to water quality treatment facilities.

BIO-75 Focused surveys for the undescribed species of everlasting (a special-status plant species) shall be conducted by a qualified botanist prior to the commencement of grading/construction activities wherever suitable habitat (primarily river terraces) could

be affected by direct, indirect, or secondary construction impacts. The surveys shall be conducted no more than one year prior to commencement of construction activities within suitable habitat, and the surveys shall be conducted at a time of year when the plants can be located and identified. Should the species be documented within the Project boundary, avoidance measures shall be implemented to minimize impacts to individual plants wherever feasible. These measures shall include minor adjustments to the boundaries/location of haul routes and other Project features. If, due to Project design constraints, avoidance of all plants is not possible, then further measures, described in BIO-76, shall be implemented to salvage seeds and/or transplant individual plants. All seed collection and/or transplantation methods, as well as the location of the receptor site for seeds/plants (assumed to be within preserved open space areas of Newhall Ranch along the Santa Clara River), shall be coordinated with CDFG prior to impacting known occurrences of the undescribed everlasting.

BIO-76 For any individual project, or any phase of an individual project, to be located where undescribed everlasting plants may occur (*i.e.*, the sites identified in this EIS/EIR and any new sites discovered by preconstruction surveys, per BIO-75, or other future field surveys), Newhall Land shall prepare and implement an Undescribed Everlasting Mitigation and Monitoring Plan prior to the issuance of grading permits.

The Plan shall provide for replacement of individual plants to be removed at a minimum 1:1 ratio, within suitable habitat at a site where no future construction-related disturbance will occur. The plan shall specify the following: (1) the location of the mitigation site in protected/preserved areas within the Specific Plan site; (2) methods for harvesting seeds or salvaging and transplantation of individual plants to be impacted; (3) measures for propagating plants (from seed or cuttings) or transferring living specimens from the salvage site to the introduction site; (4) site preparation procedures for the mitigation site; (5) a schedule and action plan to maintain and monitor the mitigation area; (6) the list of criteria and performance standards by which to measure the success of the mitigation site (below); (7) measures to exclude unauthorized entry into the mitigation areas; and (8) contingency measures such as erosion control, replanting, or weeding to implement in the event that mitigation efforts are not successful. The performance standards for the Undescribed Everlasting Mitigation and Monitoring Plan shall be the following:

a. Within four years after reintroducing the undescribed everlasting to the mitigation site, the extent of occupied acreage and the number of established, reproductive plants will be no smaller than at the site lost for project construction.

b. Non-native species cover will be no more than 5% absolute cover through the term of the restoration.

c. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana*), and any species listed on the California State Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site as of the date of completion approval.

BIO-77 A Middle Canyon Spring Habitat Management Plan will be developed that details the measures to be implemented to maintain the populations of the undescribed snail and sunflower species. The plan shall be subject to the approval of CDFG and implemented by Newhall Land prior to disturbance within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of Middle Canyon Spring. The plan shall include the following elements: (1) collection of data on existing site conditions; (2) construction monitoring program and a post-development monitoring program; (3) threshold parameters that activate adaptive management measures across a series of potential future scenarios, including water quality and water quantity scenarios, including the potential use of infiltration wells, if these should become necessary to ensure water quantity; (4) measures to exclude unauthorized entry into the spring; and (5) contingency measures in the event that management efforts are not successful. Plan elements are further described below:

Pre-development data collection:

Upon approval of the proposed Project, data collection for Middle Canyon Spring and its biotic community will be initiated. Site assessments will be completed by biologists and, as needed, with surveyors, engineers, geologists, and hydrogeologists to collect the following data, subject to limitations on disturbances: (1) inventory of plant species within and adjacent to the spring; (2) percent native and non-native plant cover and percent bare ground within and adjacent to the spring using the relevé method, a visual estimation technique to classify and map large vegetation areas in a limited amount of time (see below); (3) structural description of vegetation communities within each relevé plot; (4) GPS mapping of all trees within core spring area and adjacent 100 feet; (5) GPS mapping of special-status sunflower; (6) census special-status sunflower stem numbers; (7) description of any disturbances to the spring area; (8) establishment of permanent photo points; (9) photo documentation of seasonal changes in the spring; (10) survey and mapping of hydrologic and topographic features in the area adjacent to the spring; (11) population data on the undescribed snail,

including distribution, abundance, density, size classes and seasonal activity, and microhabitat descriptions; (12) invertebrates survey; (13) amphibian survey; (14) characterization of algal and microbial components; (15) survey of spring inlet and outlets for comparison to piezometer water elevations from monitoring points P-1MS, P-2MS, and P-8B; (16) flow rates of spring outlets at a frequency to record diurnal fluctuations; (17) approximate evapotranspiration rates of the vegetation community; (18) piezometer water elevation data from P-1MS, P-2MS, and P-8B collected at a frequency suitable to determine seasonal variations in groundwater elevations; (19) continuously recorded surface water temperature and depth profile at a spring monitoring location and piezometers P-1MS and P-2MS; (20) water quality/chemistry data in the spring and the three nearby piezometers (P-1MS, P-2MS, and P-8B) (dissolved oxygen [DO, spring only], salinity, pH and alkalinity, nitrates, sulfates, relevant cations and anions [bicarbonate, calcium, chloride, magnesium, nitrate as NO_3, potassium, sodium], total dissolved solids [TDS], turbidity [spring only], and suspended solids [spring only]); (21) soil samples along the margin of the spring to determine soil classification types; and (22) as available, compilation of a record of historical photographs and aerial photographs of the spring and adjacent areas.

Vegetation data will be collected using a non-invasive monitoring method and analyzed in accordance with the California Native Plant Society (CNPS) *Relevé Protocol* (2004), which provides for a visual assessment of vegetation communities instead of the more intrusive point-intercept transect methods. This will ensure that collection of vegetation data will limit damage to the spring vegetation and limit the establishment of trails during monitoring visits.

Additionally, for two years following approval of the proposed Project, the applicant, in consultation with CDFG, shall provide for the collection of seed from the undescribed sunflower species by a qualified research institution for long-term seed bank preservation or other conservation purposes. Further, to facilitate additional research of the species, applicant shall allow CDFG access to the spring complex for future conservation purposes.

Prior to establishing the post-development long-term thresholds discussed below, hydrologic and biologic data will be evaluated, and any increase or decrease greater than 10% in monitoring parameters 2, 11 through 16, and 18 through 20, described above, will serve as an interim threshold and will trigger adaptive management measures, such as those described below. Should these thresholds be triggered, CDFG will be notified within 24 hours to determine what actions, if necessary, will be implemented. Biological data collection will contribute to the establishment of habitat criteria necessary for sustaining the undescribed snail and the undescribed sunflower.

Construction monitoring program and data collection

Data collection described above will continue during construction near the spring complex (Commerce Center Drive Bridge and development of Middle Canyon (Mission Village planning area)). Monitors will be on site daily when work is conducted within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, and weekly during mass grading of Middle Canyon, to observe and report on construction activities. Monitors will ensure that appropriate avoidance and minimization measures are implemented, such as the installation and maintenance of perimeter construction fencing and storm water controls, silt fences, and sand bags. During any period where dewatering occurs within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, biological and hydrologic parameters will be monitored daily. No dewatering activities shall occur in the spring complex. Discharge of any dewatering waters, nuisance irrigation flows, water quality basin, subdrain, backdrain, or toe drain flows shall be directed away from the spring.

Post-development data collection

Biological and hydrologic monitoring will continue post-development. For the first two years after build-out of Middle Canyon (Mission Village), post-construction monitoring will be as frequent as during the pre-construction period. After the two-year period, data collected and the frequency of monitoring may be adjusted, in consultation with CDFG. The post-development monitoring program will continue to collect data on trends and changes in the populations of the undescribed snail and sunflower and document any shift in spring habitat composition or any changes in conditions that would potentially impact the spring system, as detailed above. Analysis and comparison of collected data will establish long-term thresholds. These thresholds will serve to trigger adaptive management measures during the post-development period.

Adaptive management

As dictated by the thresholds discussed above, the following measures may be implemented after consultation with CDFG in the event a threshold is exceeded. These actions may include, but are not limited to: (1) the addition of supplemental water via an existing deep Saugus well in Middle Canyon; (2) removal of infiltration water by diverting flow from upstream water quality features; (3) implementing invasive species control; and (4) implementing additional controls to prevent unauthorized access to the spring complex.

Monitoring report

Annual monitoring reports will be prepared to summarize the status of the undescribed snail and sunflower and hydrology within Middle Canyon Spring. These reports will be used to evaluate the significance of impacts and the efficacy of mitigation measures. Reports will include results of biological surveys, flow data, groundwater modeling results, water quality data, mapping of the spring features and biota, photo-documentation from permanent photo points, analysis of field and lab data, conclusions based on ongoing monitoring efforts, and recommendations for future management actions. Annual monitoring reports will be submitted to CDFG and Corps.

BIO-78 A cowbird trapping program shall be implemented once vegetation clearing begins and maintained throughout the construction, maintenance, and monitoring period of the riparian restoration sites. A minimum of five traps shall be utilized, with at least one trap adjacent to the project site and one or two traps located at feeding areas or other CDFG-approved location. The trapping contractor may consult with CDFG to request modification of the trap location(s). CDFG must approve any relocation of the traps. Traps will be maintained beginning each year on April 1 and concluding on/or about November 1 (may conclude earlier, depending upon weather conditions and results of capture). The trapping contractor may also consult CDFG on a modified, CDFG-approved trapping schedule modification. The applicant shall follow CDFG and USFWS protocol. In the event that trapping is terminated after the first few years, subsequent phases of the RMDP development will require initiation of trapping surveys to determine whether re-establishment of the trapping program is necessary.

BIO-79 The status of the Potrero Canyon San Emigdio blue butterfly colony shall be monitored by a qualified biologist for a period of five years after Potrero Canyon Road construction completion/operation commencement to evaluate whether the operation of the road may be contributing to a population decline in the colony. Should it be determined that a population decline is occurring, habitat creation for the San Emigdio blue butterfly shall be implemented in suitable locations contiguous to the habitat but away from the road. A habitat creation plan will be prepared that details the location and methods for creating habitat, that specifies success criteria, and that describes measures that will be implemented in the event that the habitat creation does not stabilize the San Emigdio blue butterfly population.

BIO-80 The Project applicant will retain a qualified biologist to develop an Exotic Wildlife Species Control Plan and implement a control program for bullfrog, African clawed frog, and crayfish. The program will require the control of these species during construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures). The Plan shall include a description of the species

targeted for eradication, the methods of harvest that will be employed, the disposal methods, and the measures that would be employed to avoid impacts to sensitive wildlife (*e.g.*, stickleback, arroyo toad, nesting birds) during removal activities (*i.e.*, timing, avoidance of specific areas). Annual monitoring shall occur for the first five years after construction of Project facilities. After five years, bi-annual monitoring shall occur for up to 50 years to determine if additional control is necessary. Monitoring will be conducted within sentinel locations along the River Corridor SMA and where the Project provides potential habitat for these species (*e.g.*, future ponds and water features). Control shall be conducted within Project facilities where monitoring results indicate that exotic species have colonized an area.

BIO-81 The installation of new, or relocation of existing, utility poles and phone and cell towers shall be coordinated with CDFG where located in the High Country SMA and Salt Creek area. The applicant or SCE shall install utility poles, phone, and cell towers in conformance with APLIC standards for collision-reducing techniques as outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).

BIO-82 All surfaces on new antennae and phone/utility towers shall be designed and operated with anti-perching devices in conformance with APLIC standards to deter California condors and other raptors from perching. During construction the area shall be kept clean of debris, such as cable, trash, and construction materials. The applicant shall collect all microtrash and litter (anything shiny, such as broken glass), vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash: what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash.

The applicant shall retain a qualified biologist with knowledge of California condors to monitor construction activities within the Project area. The resumes of the proposed biologist(s) will be provided to CDFG for concurrence. This biologist(s) will be referred to as the authorized biologist hereafter. During clearing and grubbing of construction areas, the qualified biologist shall be present at all times. During mass grading, construction sites shall be monitored on a daily basis. The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. If condors are observed landing in the Project area, the applicant shall avoid further construction within 500 feet of the sighting until the animals have left the area, or as otherwise authorized by CDFG and USFWS. All condor sightings in the Project area will be reported to CDFG and USFWS within 24 hours of the sighting. Should condors be found roosting within 0.5 mile of the construction area, no construction activity shall occur between one hour before sunset to one hour after sunrise, or until the condors leave the area, or as otherwise directed by USFWS.

Should condors be found nesting within 1.5 miles of the construction area, no construction activity will occur until further authorization occurs from CDFG and USFWS.

BIO-83 Thirty days prior to construction activities, a qualified biologist shall conduct a preconstruction survey for ringtail. The survey area shall include suitable riparian and woodland habitat (southern coast live oak riparian forest, southern cottonwood–willow riparian forest, southern willow scrub, coast live oak woodland, valley oak woodland, and mixed oak woodland) within the construction disturbance zone and a 300-foot buffer around the construction site. Should the ringtail be observed in the breeding and rearing period of February 1 through August 31, no construction-related activities shall occur within 300 feet of the occupied area for the period of February 1 through August 31 or until the ringtail has been determined by a qualified biologist (in consultation with CDFG) to no longer occupy areas within 300 feet of the construction zone and/or that construction activities would not adversely affect the successful rearing of young. If the ringtail is observed within the construction disturbance zone or in the 300-foot buffer around the construction site in the nonbreeding/rearing period of September 1 through January 31, and avoidance is not possible, denning ringtail shall be safely evicted under the direction of a qualified biologist (as determined by a Memorandum of Understanding with CDFG). All activities that involve the ringtail shall be documented and reported to CDFG.

BIO-84 Bridge and culvert designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area. The final design of the roosting structures would be chosen in consultation with CDFG.

BIO-85 To preclude the invasion of Argentine ants into the spineflower preserves and their associated buffers, controls will be implemented using an integrated pest management (IPM) approach in accordance with the approved SCP. The controls include (1) providing "dry zones" between urban development and spineflower preserves, including the buffers; (2) ensuring that landscape container plants installed within 200 feet of spineflower preserves are ant free prior to installation; (3) maintaining natural hydrological conditions in the spineflower preserves, including the buffers, through project design features; and (4) using drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.

BIO-86 Requires focused surveys for the undescribed snail species by a qualified biologist prior to the commencement of grading/construction activities in any drainage area supporting perennial flow. Any individuals of the undescribed snail species found within the

Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If undescribed snails are discovered during aquatic and semi-aquatic pre-construction surveys in any other perennial flowing water, the applicant shall consult with CDFG prior to initiating disturbance of the area. A report documenting the number of snails located, the conditions of the area, and where the species has been relocated to, if applicable, shall be submitted to CDFG within 60 days following the relocation.

BIO-87 Following the completion and occupancy of a development area, quarterly monitoring shall be initiated for Argentine ants along the urban–open space interface at sentinel locations where invasions could occur (*e.g.*, where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the monitoring locations. Ant pitfall traps will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures will be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to nest/mound insecticide treatment, or available natural control methods being developed. A general reconnaissance of the infested area would also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, or collected water. Monitoring and control of Argentine ants would occur for a 50-year period.

BIO-88 Any southern California black walnut and mainland cherry trees or shrubs outside riparian areas greater than one inch dbh shall be replaced in the ratio of at least 2:1. Multi-trunk trees/shrub dbh shall be calculated based on combined trunk dbh. Mitigation shall be deemed complete when each replacement tree attains at least one inch in diameter one foot above the base.

BIO-89 Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 300 feet of construction sites and access roads shall be surveyed at the appropriate season for two-striped garter snake and south coast garter snake. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and September 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. If located, the species will be relocated to suitable pre-approved locations identified in the two-striped garter snake and/or south coast garter snake Relocation Plan.

The applicant shall develop a Plan to address the relocation of two-striped garter snake and south coast garter snake. The Plan shall include but not be limited to the timing and

location of the surveys that would be conducted for each species, identify the locations where more intensive efforts should be conducted, identify the habitat and conditions in the proposed relocation site(s), identify the methods that would be utilized for trapping and relocating the individual species, and provide for the documentation/recordation of the species and number of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities, within potentially occupied habitat.

The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of two-striped garter snake and/or south coast garter snake. Clearance surveys for garter snakes shall be conducted within 200 feet of potential habitat by the authorized biologist prior to the initiation of construction each day. The resume of the proposed biologists will be provided to CDFG for approval prior to conducting the surveys.

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4.5.7 SUMMARY OF SIGNIFICANCE FINDINGS

Table 4.5-72 summarizes the significance findings for Alternatives 2 through 7 for direct, indirect, and secondary impacts to vegetation communities and unique landscape features, and lists the associated mitigation measures. **Table 4.5-73** summarizes the significance findings for impacts to common wildlife. It should be noted that, with the exception of the bird guilds, the mitigation measures listed for impacts to common wildlife are not required because all impacts would be less than significant prior to mitigation. These mitigation measures were identified for other biological resources for which impacts would be significant, absent mitigation, but are included for common wildlife because they would also further reduce impacts to these common species. For the bird guilds, impacts to individuals would be significant, absent mitigation, due to potential impacts to nests, eggs, and young, which are prohibited by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code sections 3503 and 3503.4 (birds of prey), which provides protection for nests, eggs, and nestlings during the breeding season, for species for which hunting or depredation permits are required. BIO-52 and BIO-56, which require preconstruction surveys for nesting birds and biological monitoring during vegetation clearing, are the only mitigation measures required for the bird guild species. **Table 4.5-74** summarizes the significance findings for impacts to wildlife habitat linkages, wildlife corridors, and wildlife crossings, and lists the appropriate mitigation measures. **Table 4.5-75** summarizes the significance findings for special-status species, and lists the appropriate mitigation measures.

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Table 4.5-72
Summary of Significance Findings for Impacts to Vegetation Communities and Unique Landscape Features

Vegetation Communities and Land Covers	Direct Impacts (Removal of Vegetation) for Alternatives 2-7	Indirect Impacts (Removal of Vegetation) for Alternatives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Removal of Vegetation	Mitigation for Secondary Impacts
Riparian Communities	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-26, 26a, 27, 28, 34-43, 47a, 63); BIO (1-16, 19, 52, 62, 69, 73)	SP-4.6 (7, 17-20, 26a, 29-35, 39, 43-45, 49-52, 58, 64); BIO (45-47, 49, 52, 69-73)
California Annual Grassland, Agriculture, Disturbed Land, and Developed Land	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	SP-4.6 (17-26, 27, 34-42); BIO (19, 52, 62, 69, 73)	SP-4.6 (17-20, 29-35, 39, 44, 45, 49-52, 58); BIO (45-47, 49, 52, 69-73)
Coastal Scrub Communities	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	SP-4.6 (17-26, 27, 34-42); BIO (19, 20, 21, 52, 62, 69, 73)	SP-4.6 (17-20, 29-35, 39, 44, 45, 49-52, 58); BIO (45-47, 49, 52, 69-73)
Chaparral Communities	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	SP-4.6 (17-26, 27, 34-42); BIO (19, 52, 62, 69, 73)	SP-4.6 (17-20, 29-35, 39, 44, 45, 49-52, 58); BIO (45-47, 49, 52, 69-73)
Oak Woodland Communities (Coast Live Oak Woodland, Mixed Oak Woodland, Valley Oak/Grass, Valley Oak Woodland)	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-26, 26a, 27, 28, 34-43, 47a, 48, 63); BIO (1-16, 19, 22, 42, 52, 62, 69, 73)	SP-4.6 (7, 17-20, 26a, 29-35, 39, 43-45, 49-52, 58, 64); BIO (45-47, 49, 52, 69-73)
Purple Needlegrass	No impact is expected to occur	No impact is expected to occur	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (17, 31, 32, 33, 49-52); BIO (69, 72)
California Walnut Woodland	No impact is expected to occur	No impact is expected to occur	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (17, 31, 32, 33, 49-52); BIO (69, 72)
Unique Landscape Features	n/a	n/a	n/a	n/a	n/a	n/a

Table 4.5-73
Summary of Significance Findings for Impacts to Common Wildlife

Wildlife Species Guild	Direct Impacts for Alternatives 2-7	Indirect Impacts for Alternatives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to the Guild	Mitigation for Direct and Indirect Impacts	Mitigation for Secondary Impacts
Insect	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 58, 63); BIO (1-16, 19, 22, 49, 64, 70-72)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Mollusk	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3	n/a	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Reptile – Low Mobility	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19, 22, 52, 63, 64, 69, 72, 85, 87	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Reptile and Amphibian – Semi-Aquatic	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 55, 56, 58, 63; BIO (1-16, 19, 22, 45, 49, 52, 63, 69, 72, 80, 85, 87)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Fish	Adverse but not significant	No impact is expected to occur	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 30-32, 55, 58, 63); BIO (1 -16, 45-49, 63, 64)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bird – Raptor	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19, 22, 52, 56, 63, 64, 69, 72, 81, 82)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bird – Riparian	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19, 22, 52, 56, 63, 64, 69, 72, 78)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bird – Upland Grassland	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	SP-4.6 (27, 30-32, 36-42, 56); BIO (19, 52, 56, 63, 64, 69)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bird – Upland Scrub and Chaparral	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	SP-4.6 (27, 30-32, 36-42, 56); BIO (19-21, 52, 56, 63, 64, 69, 72, 78)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bird – Upland Woodland	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19, 22, 52, 56, 63, 64, 69, 72, 78)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Bat	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-17, 63, 21-26, 27, 30-32, 36-42, 48, 56); BIO (1-16, 19, 22, 63, 69)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Mammal – Low Mobility	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (19-21, 52, 63, 64, 69)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Mammal – Moderate Mobility	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19-22, 52, 63, 64, 69)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3
Mammal – High Mobility	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	SP-4.6 (1-19, 21-26, 27, 30-32, 36-42, 56, 63); BIO (1-16, 19-22, 52, 59, 63, 64, 69)	Addressed at species level in Subsection 4.5.5.3	Addressed at species level in Subsection 4.5.5.3

Table 4.5-74
Summary of Significance Findings for Impacts to Wildlife Habitat Linkages, Wildlife Corridors, and Wildlife Crossings

Category	Significant Impacts?	Impacts to Wildlife for Alternatives 2-7	Mitigation for General Significant Impacts	Mitigation for Removal of Vegetation	Mitigation for Secondary Impacts
Wildlife Landscape Habitat Linkages	No	Adverse but not significant	n/a	Mitigation addressed at species level in Subsection 4.5.5.3	Mitigation addressed at species level in Subsection 4.5.5.3
Wildlife Corridors	Yes	Significant absent mitigation	SP-4.6 (1-17, 21-26, 29-32, 36-42, 56, 63); BIO (1-16, 19-21, 59, 63, 69, 72, 73, 85, 87)	Mitigation addressed at species level in Subsection 4.5.5.3	Mitigation addressed at species level in Subsection 4.5.5.3
Wildlife Crossings	No	Adverse but not significant	n/a	Mitigation addressed at species level in Subsection 4.5.5.3	Mitigation addressed at species level in Subsection 4.5.5.3

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Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Reptile and Amphibian – Semi-Aquatic	arroyo toad	FE/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 63); BIO (1-16)	SP-4.6 (53, 55, 58, 59); BIO (17, 46, 48, 49, 52, 70)	SP-4.6 (1-20, 24, 27, 53, 55, 56, 58, 59, 63); BIO (1-17, 19-21, 44-49, 63, 64, 69-74, 77, 80, 85, 87)	Adverse but not significant
Reptile and Amphibian – Semi-Aquatic	California red-legged frog	FT/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 63); BIO (1-16)	SP-4.6 (53, 55, 58, 59); BIO (18, 46, 48, 49, 52, 70)	SP-4.6 (1-20, 24, 27, 53, 55, 56, 58, 59, 63); BIO (1-16, 18, 19, 44-49, 63, 64, 69-74, 77, 80, 85, 87)	Adverse but not significant
Fish	southern steelhead	FE/CSC	No	Less than significant	No impact is expected to occur	Less than significant	Less than significant	No impact is expected to occur	n/a	Less than significant	Less than significant	Although no mitigation is required, the species will benefit from SP-4.6 (1-16, 18-26, 44, 53, 57-59); BIO (43 49, 63, 70, 71, 80); GRR (1-7); WQ (1).			Adverse but not significant
Fish	unarmored threespine stickleback	FE/CE, CFP	Yes	Significant absent mitigation	No impact is expected to occur	Adverse but not significant	Significant absent mitigation	No impact is expected to occur	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (44, 54, 55, 58); BIO (45, 47-49, 70, 71); GRR (1-7); WQ (1)	SP-4.6 (44, 53-55, 57-59); BIO (43-49, 70, 71); GRR (1-7); WQ (1)	SP 4.6 (1-26, 27, 44, 54, 55, 58, 63); BIO (1-16, 45, 47-49, 63, 70, 71, 73, 80); GRR (1-7); WQ (1)	Adverse but not significant
Bird – Raptor	American peregrine falcon	BCC/CE, CFP	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Raptor	California condor	FE/CE, CFP	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Adverse but not significant	Significant absent mitigation	n/a	BIO (82)	SP-4.6 (29-33, 36-42); BIO (19-21, 63, 69, 81, 82)	Adverse but not significant
Bird – Raptor	golden eagle (nesting and wintering)	BCC/WL, CFP	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36-43, 48); BIO (19-21, 42)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (29-43, 48, 56); BIO (19-21, 52, 56, 63, 64, 69, 81, 82)	Adverse but not significant
Bird – Raptor	white-tailed kite (nesting)	None/CFP	Yes	Significant absent	Significant absent	Significant absent	Significant absent	Significant absent	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18,	SP-4.6 (53, 59); BIO	SP-4.6 (1-26, 29-42, 56, 63);	Adverse but not

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
				mitigation	mitigation	mitigation	mitigation	mitigation				19, 21-26a, 36-42, 48, 63); BIO (1-16, 19-22, 42, 55)	(52, 56)	BIO (1-16, 19-22, 52, 56, 63, 64, 69, 71, 73)	significant
Bird – Riparian	least Bell's vireo (nesting)	FE/CE	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation.	SP-4.6 (1-16, 18, 19, 21-26, 63); BIO (1-16, 55)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 55, 56, 58, 63); BIO (1-16, 47, 49, 52, 55, 56, 63, 64, 70-73, 78, 85, 87)	Adverse but not significant
Bird – Riparian	southwestern willow flycatcher (nesting) (applies to full species willow flycatcher also)	FE/CE	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 63); BIO (1-16)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 55, 56, 58, 63); BIO (1-16, 47, 49, 52, 55, 56, 63, 64, 70-73, 78, 85, 87)	Adverse but not significant
Bird – Riparian	western yellow-billed cuckoo (nesting)	FC,BCC/CE	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 63); BIO (1-16)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 55, 56, 58, 63); BIO (1-16, 47, 49, 52, 55, 56, 63, 64, 70-73, 78, 85, 87)	Adverse but not significant
Bird – Upland Scrub and Chaparral	coastal California gnatcatcher	FT/CSC	No	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36–42); BIO (19–21, 55)	SP-4.6 (53; 59); BIO (52, 56)	SP-4.6 (29–42, 56); BIO (19-21, 52, 56, 63, 64, 69, 71, 72, 85, 87)	Adverse but not significant
Mammal – Moderate Mobility	ringtail	None/CFP	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 48, 63); BIO (1-16, 19, 42, 55)	SP-4.6 (53, 59); BIO (52, 83)	SP-4.6 (1-19, 21-26, 27, 29-32, 36-42, 56, 63); BIO (1-16, 19, 52, 63, 64, 73, 83)	Adverse but not significant
Mollusk	undescribed snail	None/None	Yes	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	n/a	Significant absent mitigation	Significant absent mitigation	n/a	n/a	SP-4.6 (1-26, 47a, 55, 58, 63); BIO (1-16, 45, 49, 51, 52, 70-74, 77, 86)	Adverse but not significant
Reptile – Low Mobility	coast horned lizard	None/CSC	Yes	Significant absent	Significant absent	Significant absent	Significant absent	Significant absent	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18,	SP-4.6 (53, 59); BIO	SP-4.6 (1-26, 27, 29-42, 53,	Adverse but not

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
				mitigation	mitigation	mitigation	mitigation	mitigation				19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	(52, 54)	59, 63); BIO (1-16, 19-21, 63, 64, 69, 71-73, 85, 87)	significant
Reptile – Low Mobility	coast patch-nosed snake	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 54)	SP-4.6 (1-26, 27, 29-42, 53, 56, 59, 63); BIO (1-16, 19-21, 63, 64, 69, 72, 73, 85, 87)	Adverse but not significant
Reptile – Low Mobility	silvery legless lizard	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 54)	SP-4.6 (1-26, 27, 29-42, 53, 59, 63); BIO (1-16, 19-21, 63, 64, 69, 71–73, 85, 87)	Adverse but not significant
Reptile and Amphibian – Semi-Aquatic	south coast garter snake	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1–16, 18, 19, 21–26, 36–42, 55, 58, 63); BIO (1–16, 19)	SP-4.6 (53, 55, 58, 59); BIO (46, 48, 49, 52, 70, 89)	SP-4.6 (1–26, 27, 29–32, 34–42, 53, 55, 58, 59, 63); BIO (1–16, 19, 44-49, 63, 64, 69–74, 77, 80, 85, 87, 89)	Adverse but not significant
Reptile and Amphibian – Semi-Aquatic	southwestern pond turtle	None/CSC	Yes	Alternative 2: Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7: Significant absent mitigation	Significant absent mitigation	Alternative 2: Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7: Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18-19, 21-26, 36-42, 55, 58, 63); BIO (1-16, 19-21)	SP-4.6 (53, 55, 58, 59); BIO (45-49, 50, 52, 70)	SP-4.6 (1-26, 27, 29-32, 34-42, 53, 55, 56, 58, 59, 63); BIO (1-16, 19-21, 44-50, 52, 63, 64, 69-74, 77, 80)	Alternative 2: Significant Unavoidable Impacts; Alternatives 3 through 7: Adverse but not significant
Reptile and Amphibian – Semi-Aquatic	two-striped garter snake	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 55,	SP-4.6 (53, 55, 58, 59); BIO (46-49, 52, 70,89)	SP-4.6 (1-26, 27, 29-32, 34-42, 53, 55, 58, 59, 63); BIO	Adverse but not significant

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Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
												58, 63); BIO (1-16, 19)		(1-16, 19, 44-49, 63, 64, 69-74, 77, 80, 85, 87, 89)	
Reptile and Amphibian – Semi-Aquatic	western spadefoot toad	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 55, 58, 63); BIO (1-16, 19-21, 53)	SP-4.6 (53, 55, 58, 59); BIO (46, 48, 49, 52, 53, 70)	SP-4.6 (1-26, 27, 29-32, 34-42, 53, 55, 56, 58, 59, 63); BIO (1-16, 19-21, 44, 46, 48, 49, 52, 63, 64, 69-74, 77, 80, 85, 87)	Adverse but not significant
Fish	arroyo chub	None/CSC	Yes	Significant absent mitigation	No impact is expected to occur	Adverse but not significant	Significant absent mitigation	No impact is expected to occur	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (44, 54, 55, 58); BIO (45, 47-49, 70, 71); GRR (1-7); WQ (1)	SP-4.6 (44, 53-55, 57-59); BIO (43-49, 70, 71); GRR (1-7); WQ (1)	SP 4.6 (1-26, 27, 44, 54, 55, 58, 63); BIO (1-16, 45, 47-49, 63, 70, 71, 73, 80); GRR (1-7); WQ (1)	Adverse but not significant
Fish	Santa Ana sucker	None/CSC	Yes	Significant absent mitigation	No impact is expected to occur	Adverse but not significant	Significant absent mitigation	No impact is expected to occur	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (44, 54, 55, 58); BIO (45, 47-49, 70, 71); GRR (1-7); WQ (1)	SP-4.6 (44, 53-55, 57-59); BIO (43-49, 70, 71); GRR (1-7); WQ (1)	SP 4.6 (1-26, 27, 44, 54, 55, 58, 63); BIO (1-16, 45, 47-49, 63, 70, 71, 73, 80); GRR (1-7); WQ (1)	Adverse but not significant
Bird – Upland Scrub and Chaparral	loggerhead shrike	BCC/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 48, 63); BIO (1-16, 19-22)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19-21, 42, 52, 56, 63, 64, 69,71)	Adverse but not significant
Bird – Raptor	long-eared owl (nesting)	None/CSC	Yes	Adverse but not significant	Foraging habitat: Significant absent mitigation; Nesting habitat: Adverse but	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 48, 63); BIO (1-16, 19, 42, 55)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19, 52, 56, 63, 64, 69, 71, 73)	Adverse but not significant

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Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
					not significant										
Bird – Raptor	northern harrier (nesting)	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 55, 56, 58, 63); BIO (1-16, 19-21, 47, 49, 52, 56, 63, 64, 69–71, 73)	Adverse but not significant
Bird – Raptor	short-eared owl (nesting)	USBC/CSC	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Raptor	western burrowing owl (burrow sites and some wintering sites)	BCC/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36-42); BIO (19)	SP-4.6 (53, 59); BIO (52, 57)	SP-4.6 (29-42, 53, 56, 59); BIO (19, 52, 57, 63, 64, 69, 71)	Adverse but not significant
Bird – Riparian	summer tanager (nesting)	None/CSC	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Riparian	tricolored blackbird (nesting colony)	BCC/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16,18, 19, 21-26, 36-42, 63); BIO (1-16, 19)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 55, 56, 58, 63); BIO (1-16, 19, 47, 49, 52, 56, 63, 64, 69-71, 73)	Adverse but not significant
Bird – Riparian	vermilion flycatcher (nesting)	None/CSC	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Riparian	yellow-breasted chat (nesting)	None/CSC	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 56, 55, 58, 63); BIO (1-16, 47, 49, 52, 55, 56, 63, 64, 69-73, 78, 85, 87)	Adverse but not significant
Bird – Riparian	yellow-headed blackbird (nesting)	None/CSC	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant

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Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Bird – Riparian	yellow warbler (nesting)	None/CSC	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 55, 56, 58, 63); BIO (1-16, 47, 49, 52, 55, 56, 63, 64, 69-73, 78, 85, 87)	Adverse but not significant
Bird – Upland Grassland	grasshopper sparrow (nesting)	None/CSC	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Adverse but not significant	Adverse but not significant	n/a	SP-4.6 (53, 59); BIO (52, 56)	n/a	Adverse but not significant
Bat	pallid bat	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	pocketed free-tailed bat	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	Townsend's big-eared bat	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	western mastiff bat	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	western red bat	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48,	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant

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Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
												63); BIO (1-16, 19-21)			
Mammal – Low Mobility	San Diego desert woodrat	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 36-42, 63); BIO (1-16, 19-21)	BIO (52, 58)	SP-4.6 (1-26, 27, 29-42, 56, 63); BIO (1-16, 19-21, 52, 58, 63, 64, 69, 73)	Adverse but not significant
Mammal – Low Mobility	southern grasshopper mouse	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation.	Significant absent mitigation	SP-4.6 (1-16, 18-19, 21-26, 36-42, 63); BIO (1-16, 19-21)	BIO (52)	SP-4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19-21, 52, 63, 64, 69, 73)	Adverse but not significant
Mammal – Moderate Mobility	American badger	None/CSC	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (41, 52)	SP-4.6 (1-26, 27, 29-42, 53, 56, 59, 63); BIO (1-16, 19-21, 41, 52, 58, 59, 63, 64, 69, 73)	Adverse but not significant
Mammal – Moderate Mobility	San Diego black-tailed jackrabbit	None/CSC	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 58)	SP-4.6 (1-26, 27, 29-42, 53, 56, 59, 63); BIO (1-16, 19-21, 52, 58, 59, 63, 64, 69, 73)	Adverse but not significant
Insect (Butterflies)	monarch butterfly (wintering sites)	None/California Special Animal	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	Although no mitigation is required, the species will benefit from SP-4.6 (53, 59).			Adverse but not significant
Insect (Butterflies)	San Emigdio blue butterfly	None/California Special Animal	Yes	Alternative 2: Significant Unavoidable Impacts Alternatives 3-7: Significant absent mitigation	Alternative 2: Significant Unavoidable Impacts Alternatives 5 and 6: Significant	Alternative 2: Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7: Significant	Alternative 2: Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7:	Alternative 2: Significant Unavoid-able Impacts Alterna-tives 3-7:	n/a	Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7: Significant absent mitigation	Alternative 2: Significant Unavoidable Impacts Alternatives 3-7: Significant absent mitigation	SP-4.6 (21-26, 36-42); BIO (19, 66, 67)	BIO (65)	SP-4.6 (21-26, 33, 36-42, 49-52, 55, 58, 67); BIO (24, 34-37, 52, 70-72, 79)	Alternative 2: Significant Unavoidable Impacts; Alternatives 3 through 7: Adverse but not

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Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
					absent mitigation Alternatives 3, 4, and 7: No impact is expected to occur	absent mitigation	Significant absent mitigation	Significant absent mitigation							significant
Reptile – Low Mobility	coastal western whiptail	None/California Special Animal	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53,59); BIO (52, 54)	SP-4.6 (1-26, 27, 29-42, 53, 59, 63); BIO (1-16, 19-21, 63, 64, 69, 71-73, 85, 87)	Adverse but not significant
Reptile – Low Mobility	rosy boa	None/California Special Animal	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 54)	SP-4.6 (1-26, 27, 29-42, 53, 56, 59, 63); BIO (1-16, 19-21, 63, 64, 69, 71-73, 85, 87)	Adverse but not significant
Reptile – Low Mobility	San Bernardino ringneck snake	None/California Special Animal	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26, 27, 36-42, 63); BIO (1-16, 19-21)	SP-4.6 (53, 59); BIO (52, 54)	SP-4.6 (1-26, 27, 29-42, 53, 56, 59, 63); BIO (1-16, 19-21, 63, 64, 69, 71-73, 85, 87)	Adverse but not significant
Bird – Raptor	Cooper's hawk (nesting)	None/WL	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 48, 63); BIO (1-16, 19-22, 42, 55)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19-22, 52, 56, 63, 64, 69, 71, 73)	Adverse but not significant
Bird – Raptor	ferruginous hawk (wintering)	BCC/WL	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	SP-4.6 (21-25, 36-42); BIO (19-21)	n/a	n/a	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Bird – Raptor	merlin (wintering)	None/WL	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Raptor	prairie falcon (nesting)	BCC/WL	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Raptor	sharp-shinned hawk (nesting)	None/WL	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Raptor	turkey vulture	None/CDFG Trust Resource	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (29-42, 48, 56); BIO (19-21, 52, 56, 63, 64, 69, 81, 82)	Adverse but not significant
Bird – Riparian	black-crowned night-heron (rookery)	None/California Special Animal	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Riparian	Nuttall's woodpecker (nesting)	None/California Special Animal	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26a, 29-42, 48, 55, 56, 58, 63); BIO (1-16, 19, 22, 42, 47, 49, 52, 56, 63, 64, 69-73, 85, 87)	Adverse but not significant
Bird – Upland Grassland	California horned lark	None/WL	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36-42); BIO (19)	SP-4.6 (53, 59); BIO (52, 56)	SP 4.6 (29-42, 53, 56, 59); BIO (19, 52, 56, 63, 64, 71, 72, 78, 85, 87)	Adverse but not significant
Bird – Upland Scrub and Chaparral	Allen's hummingbird (nesting)	None/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 63); BIO (1-16, 19-21, 55)	SP-4.6 (53, 59); BIO (52, 56)	SP 4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19-21, 63, 69, 71-73, 85, 87)	Adverse but not significant
Bird – Upland Scrub and Chaparral	Bell's sage sparrow (nesting)	BCC/WL	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36-42); BIO (19)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (29-42, 56); BIO (19, 52, 56, 63, 64, 69, 71, 72, 78, 85, 87)	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Bird – Upland Scrub and Chaparral	black-chinned sparrow (nesting)	BCC/California Special Animal	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Upland Scrub and Chaparral	Costa's hummingbird (nesting)	None/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 18, 19, 21-26a, 36-42, 48, 63); BIO (1-16, 19-21, 55)	SP-4.6 (53, 59); BIO (52, 56)	SP 4.6 (1-26, 29-42, 56, 63); BIO (1-16, 19-21, 52, 56, 63, 64, 69, 71–73, 85, 87)	Adverse but not significant
Bird – Upland Scrub and Chaparral	rufous hummingbird (nesting)	BCC/California Special Animal	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Upland Scrub and Chaparral	southern California rufous-crowned sparrow	None/WL	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (36-42); BIO (19-21)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (29-42, 56); BIO (19–21, 52, 56, 63, 64, 69, 71, 72, 85, 87)	Adverse but not significant
Bird – Upland Woodland	chipping sparrow (nesting)	None/California Special Animal	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP 4.6 (1–26a, 29-42, 48, 56, 63); BIO (1–16, 19, 22, 42, 52, 56, 63, 64, 69, 71, 72, 78, 85, 87)	Adverse but not significant
Bird – Upland Woodland	hermit warbler (nesting)	None/CDFG Trust Resource	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Bird – Upland Woodland	Lawrence's goldfinch (nesting)	BCC/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 36-42, 48, 63); BIO (1-16, 19-21, 42)	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26, 29-42, 48, 56, 63); BIO (1-16, 19-21, 42, 52, 56, 63, 64, 69, 71, 72, 78, 85, 87)	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Bird – Upland Woodland	oak titmouse (nesting)	None/California Special Animal	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59); BIO (52, 56)	SP-4.6 (1-26a, 29-42, 48, 56, 63); BIO (1-16, 19, 22, 42, 52, 56, 63, 64, 69, 71–73, 85, 87)	Adverse but not significant
Bat	fringed myotis	None/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61,63, 64, 68, 71, 84)	Adverse but not significant
Bat	long-legged myotis	None/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	western small-footed myotis	None/California Special Animal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 36-42, 48, 63); BIO (1-16, 19-21)	BIO (52, 61, 68, 84)	SP-4.6 (56); BIO (61, 63, 64, 68, 71, 84)	Adverse but not significant
Bat	Yuma myotis	None/California Special Animal	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	n/a	BIO (52, 61, 68, 84)	SP-4.6 (1–16, 21–26a, 27, 36–42, 48, 56, 63); BIO (1–16, 19, 61, 63, 64, 68, 71, 84)	Adverse but not significant
Mammal – High Mobility	black bear	None/CDFG Trust Resource	Yes	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Significant absent mitigation	Significant absent mitigation	n/a	n/a	SP-4.6 (1-19, 21-26a, 27, 29-33, 36-43, 48, 56, 63); BIO (1-16, 19-22, 59, 63, 70)	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Mammal – High Mobility	mountain lion	None/Specially Protected Mammal	Yes	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Adverse but not significant	Significant absent mitigation	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-17, 21-26a, 27-32, 36-43, 48, 63); BIO (1-16, 19-22)	BIO (60)	SP-4.6 (1-19, 21-26, 29-33, 36-42, 48, 56, 63); BIO (1-16, 19-22, 59, 63, 64)	Adverse but not significant
Mammal – High Mobility	mule deer	None/CDFG Trust Resource	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant
Plant[1]	San Fernando Valley spineflower	FC/CE	Yes	n/a	n/a	n/a	Alternative 2: Significant Unavoidable Impacts Alternatives 3-7: Significant absent mitigation	No impact is expected to occur	Alternative 2: Significant Unavoidable Impacts, absent further mitigation Alternatives 3-7: Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (53, 59, 65-73, 76-78, 80); BIO (23-26, 35-37)	SP-4.6 (53, 59, 65-80); BIO (23-31, 33-39, 85, 87)	Alternative 2: Significant Unavoidable Impacts; Alternatives 3 through 7: Adverse but not significant
Plant	undescribed everlasting	None/None	Yes	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (1-16, 21-26, 47a, 55, 58, 63); BIO (1-16, 75, 76)	SP-4.6 (1-26, 47a, 55, 58, 63); BIO (1-16, 45, 49, 52, 70-73, 75, 76)	Adverse but not significant
Plant	undescribed sunflower	None/None	Yes	n/a	n/a	n/a	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	Significant absent mitigation	Significant absent mitigation	n/a	n/a	SP-4.6 (1-26, 47a, 55, 58, 63); BIO (1-16, 45, 49, 51, 52, 70-74, 77)	Adverse but not significant
Plant	island mountain-mahogany	None/None	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (27, 29-33, 36-42, 53, 59); BIO (19, 62)	n/a	SP-4.6 (27, 29-42, 39, 44, 45, 49-52, 55, 58); BIO (19, 49, 52, 63, 69-72)	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Plant	late-flowered mariposa lily	None/None	No	n/a	n/a	n/a	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	Adverse but not significant	Adverse but not significant	Although no mitigation is required, the species will benefit from SP-4.6 (53, 59).			Adverse but not significant
Plant	mainland cherry	None/None	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 28, 36-47a, 48, 55, 58, 61, 63); BIO (1-16, 19, 22, 62, 88)	n/a	SP-4.6 (1-26a, 27-47a, 49-52, 55, 58, 63); BIO (1-16, 45, 49, 52, 62, 69-73)	Adverse but not significant
Plant	oak trees	None/None	Yes	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (1-19, 21-33, 36-47, 48-52, 55, 58 63); BIO (1-16, 19, 22, 62, 69, 73)	SP-4.6 (1-26a, 27-47a, 49-52, 55, 58, 63); BIO (1-16, 42, 45, 49, 52, 58, 62, 63 69-73)	Adverse but not significant
Plant	oak-leaved nemophila	None/None	No	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (27, 29–33, 36–42, 49, 53, 59); BIO (19, 62)	n/a	SP-4.6 (29–42, 44, 45, 49–52, 55, 58); BIO (19, 49, 52, 63, 69–72)	Adverse but not significant
Plant	Ojai navarretia	None/None	No	n/a	n/a	n/a	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	Although no mitigation is required, the species will benefit from SP-4.6 (53, 59).			Adverse but not significant
Plant	Parish's sagebrush	None/None	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26a, 27, 28, 36-43, 46-47a, 55, 58, 63); BIO (1-16, 62)	n/a	SP-4.6 (1-26a, 27-47a, 49-52, 55, 58, 63); BIO (1-16, 45, 49, 52, 62, 69-73)	Adverse but not significant
Plant	Peirson's morning-glory	None/None	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a	n/a	Significant absent mitigation	Significant absent mitigation	SP-4.6 (27, 29-33, 36-42, 53, 59); BIO (19-21, 62)	n/a	SP-4.6 (27, 29-42, 39, 44, 45, 49-52, 55, 58); BIO (19-21, 49, 52, 63, 69-72)	Adverse but not significant

Table 4.5-75
Summary of Significance Findings for Special-Status Species

Species Guild	Common Name	Status	Significant Impacts?	Direct Impacts to Habitat for Alternatives 2-7	Indirect Impacts to Habitat for Alternatives 2-7	Combined Direct and Indirect Permanent Impacts to Habitat for Alternatives 2-7	Direct Impacts to Individuals for Alternatives 2-7	Indirect Impacts to Individuals for Alterna-tives 2-7	Combined Direct and Indirect Permanent Impacts to Individuals for Alterna-tives 2-7	Short-Term Secondary Impacts for Alternatives 2-7	Long-Term Secondary Impacts for Alternatives 2-7	Mitigation for Impacts to Habitat	Mitigation for Impacts to Individuals	Mitigation for Secondary Impacts	Significance Finding after Mitigation
Plant	Plummer's mariposa lily	None/None	No	n/a	n/a	n/a	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	No impact is expected to occur	Although no mitigation is required, the species will benefit from SP-4.6 (53, 59).			Adverse but not significant
Plant	slender mariposa lily	None/None	Yes	n/a	n/a	n/a	Adverse but not significant	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	SP-4.6 (27, 29-33, 36-42, 53, 59); BIO (25, 40)	SP-4.6 (27, 29-42, 44, 45, 49-52, 55, 58); BIO (19-21, 40, 49, 52, 63, 69-72)	Adverse but not significant
Plant	southern California black walnut	None/None	Yes	Significant absent mitigation	Significant absent mitigation	Significant absent mitigation	n/a	n/a		Significant absent mitigation	Significant absent mitigation	SP-4.6 (1-16, 21-26, 26a, 27, 28, 36-47a, 48, 55, 58, 63); BIO (1-16, 19, 22, 62, 88)	n/a	SP-4.6 (1-26a, 27-47a, 48-52, 55, 58, 63); BIO (1-16, 19, 22, 45, 49, 52, 62, 69-73)	Adverse but not significant
Plant	southwestern spiny rush	None/None	No	Adverse but not significant	Adverse but not significant	Adverse but not significant	n/a	n/a	n/a	Adverse but not significant	Adverse but not significant	Although no mitigation is required, the species will benefit from SP-4.6 (1-16, 53, 59, 63); BIO (1-16).			Adverse but not significant

[1] For those plant species for which several years of mapped occurrence data are available, impacts to those species were evaluated by impacts to individuals rather than by loss of habitat. For those plant species for which occurrences were not mapped (List 4 and Locally Regulated), impacts to those species were evaluated by loss of habitat instead of impacts to individuals

4.5.8 SIGNIFICANT UNAVOIDABLE IMPACTS

The proposed Project would result in significant and unavoidable impacts to San Fernando Valley spineflower, southwestern pond turtle, and San Emigdio blue butterfly resulting from loss of habitat and impacts to individuals.

Significant and unavoidable direct impacts would occur to San Fernando Valley spineflower due to impacts to individuals resulting from implementation of the RMDP and the SCP under Alternative 2.

Significant and unavoidable direct impacts would occur to southwestern pond turtle due to loss of habitat resulting from implementation of the RMDP and the SCP under Alternative 2.

Significant and unavoidable direct, indirect, and secondary impacts to San Emigdio blue butterfly due to loss of habitat and impacts to individuals resulting from implementation of the RMDP and the SCP and build-out of the Specific Plan, VCC, and Entrada planning areas would occur under Alternative 2.

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4.5.9 LITERATURE CITED

8 Cal.App.4th 1554 (1992). *Department of Fish and Game* v. *Anderson-Cottonwood Irrigation District*.

16 U.S.C. section 661 *et seq*. Fish and Wildlife Coordination Act (FWCA).

16 U.S.C. sections 668–668d, June 8, 1940, as amended 1959, 1962, 1972, and 1978. Bald and Golden Eagle Protection Act.

16 U.S.C. sections 703–712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989. Migratory Bird Treaty Act of 1918 (MBTA).

16 U.S.C. section 1531 *et seq.* Federal Endangered Species Act (FESA) of 1973.

33 C.F.R. 320.4, title 33. "General Policies for Evaluating Permit Application."

33 C.F.R. 325.7, title 33. "Modification, Suspension, or Revocation of Permits."

33 C.F.R. 328, title 33. "Definition of Waters of the United States."

33 U.S.C. 1251 *et seq.* Federal Water Pollution Control Act (Clean Water Act).

40 C.F.R. 123.11(m), title 40. Definition of cooling ponds.

42 FR 47840–47845. Final rule: "Correction and Augmentation of Published Rulemaking on Critical Habitats." September 22, 1977.

42 U.S.C. section 4321 *et seq.* National Environmental Policy Act (NEPA) of 1969.

44 Cal.4th 459 (2008). *Environmental Protection and Information Center* v. *California Dept. of Forestry and Fire Protection.*

45 FR 76012–76015. Proposed rule: "Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Endangered Unarmored Threespine Stickleback." November 17, 1980.

50 C.F.R. 17.1 *et seq*, title 50. "Endangered and Threatened Wildlife and Plants."

51 FR 16474–16482. Final rule: "Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Least Bell's Vireo." 1986.

51 FR 41206–41217. Final rule: "Final regulations for the regulatory program of the Corps of Engineers." November 13, 1986.

56 FR 47053–47060. Proposed rule: "Endangered and Threatened Wildlife and Plants: Proposed Rule to List the Coastal California Gnatcatcher as Endangered." 1991.

57 FR 37507–37513. "Endangered and Threatened Wildlife and Plants: Notice of Finding on Petition to List the Ferruginous Hawk." 1992.

59 FR 4845–4867. Final rule: "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo." 1994.

59 FR 64589–64866. Final rule: "Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for the Arroyo Southwestern Toad." 1994.

60 FR 58605–58614. Notice: "Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks." November 28, 1995.

61 FR 25813–25833. Final rule: "Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Red-Legged Frog." 1996.

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67 FR 21586–21598. Final rule: "Endangered and Threatened Species: Range Extension for Endangered Steelhead in Southern California." May 1, 2002.

67 FR 58580–58582. Finding that the designation of critical habitat should not be made: "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Unarmored Threespine Stickleback." September 17, 2002.

68 FR 20228–20312. Proposed rule: "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*) and Determination of Distinct Vertebrate Segment for the California Gnatcatcher (*Polioptila californica*)." April 24, 2003.

69 FR 18515–18516. Proposed rule; reopening of public comment period: "Endangered and Threatened Wildlife and Plants; Reopening of the Public Comment Period for the Determination of Distinct Vertebrate Segment for the California Gnatcatcher (*Polioptila californica*)." April 8, 2004.

69 FR 23254–23328. Proposed rule: "Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for the Arroyo Toad (*Bufo californicus*)." April 28, 2004.

70 FR 19562–19633. Final rule: "Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for the Arroyo Toad (*Bufo californicus*)." April 13, 2005.

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