County of Los Angeles

Final
Environmental Impact Report
SCH No. 2005051143
Volume III
Appendix F1.0

MISSION VILLAGE

Prepared for:

Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Prepared by:

IMPACT SCIENCES, INC.
803 Camarillo Springs Road, Suite A
Camarillo, California 93012
Phone: (805) 437-1900

NEWHALL RANCH
Newhall Ranch Company

May 2011

County of Los Angeles

Final Environmental Impact Report

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PART 4.3 CONTINUED

MISSION VILLAGE

Project No.	04-181
Vesting Tentative Tract Map No.	61105
SEA Conditional Use Permit No.	RCUP200500080
Oak Tree Permit No.	ROAK200500032
Oak Tree Permit No.	T200500043
Conditional Use Permit (Off-Site Improvements)	RCUP200500081
Parking Permit	RPKT200500011
Substantial Conformance	201000001

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FINAL
ENVIRONMENTAL IMPACT REPORT
for
MISSION VILLAGE

SCH No. 2005051143

County Project No. 04-181
Vesting Tentative Tract Map No. 61105
SEA Conditional Use Permit No. RCUP200500080
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TABLE OF CONTENTS

Volume I

Section Page

1.0 INTRODUCTION 1.0-1

2.0 TOPICAL RESPONSES, COMMENT LETTERS, AND RESPONSES TO COMMENT LETTERS 2.0-1

Topical Responses

TR1 Newhall Ranch RMDP/SCP Project and Associated EIS/EIR 2.0-4
TR2 Bankruptcy-Related Comments 2.0-10
TR3 Internal Trip Capture Model and Methodology 2.0-13
TR4 Revised Project Design 2.0-26
TR5 Chloride 2.0-51
TR6 Water Quality 2.0-65

A. State/Federal Agencies

A1 State of California Department of Conservation, dated November 18, 2010 ..... 2.0-86
A2 Dave Singleton, Native American Heritage Commission, November 9, 2010 ..... 2.0-99
A3 State of California, Governor's Office of Planning and Research, dated November 23, 2010 ..... 2.0-110
A4 Letter from Samuel Unger, P.E. Los Angeles Regional Water Quality Control Board, dated January 4, 2011 ..... 2.0-120
A5 State of California, Department of Transportation, dated December 30, 2010 ..... 2.0-147
A6 Edmund Pert, California Department of Fish and Game, January 3, 2011 ..... 2.0-171
A7 Antonio Gonzalez, Santa Monica Mountains Conservancy, November 8, 2010 ..... 2.0-176

B. Local County/CitiesAgencies

B1 County Sanitation Districts of Los Angeles County, dated November 17, 2010 ..... 2.0-212
B2a County of Ventura, Resource Management Agency, dated November 21, 2010 ..... 2.0-217
B2b County of Ventura, Watershed Protection District, dated November 1, 2010 ..... 2.0-219
B2c County of Ventura, Public Works Agency, Transportation Department, dated November 15, 2010 ..... 2.0-224
B2d County of Ventura, Air Pollution Control District, dated November 17, 2010 ..... 2.0-228
B3 County of Los Angeles Sheriff's Department, dated October 20, 2010 ..... 2.0-231
B4 Paul Brotzman, City of Santa Clarita, November 19, 2010 ..... 2.0-238
B5 County of Los Angeles Sheriff's Department, dated November 30, 2010 ..... 2.0-282
B6 County of Los Angeles Sheriff's Department, dated December 20, 2010 ..... 2.0-298
B7 County of Los Angeles, Department of Parks and Recreation, dated December 22, 2010 ..... 2.0-302
B8 John R. Todd, Los Angeles County Fire Department, December 28, 2010 ..... 2.0-304
B9 Letter from Tom Wolfington, P.E. Ventura County Watershed Protection District, dated January 4, 2011 ..... 2.0-324

C. Other Private Agencies/Groups

C1 Ronald Meschner, West Ranch Town Council, November 8, 2010 ..... 2.0-344
C2 Jonas Peterson, Santa Clarita Valley Economic Development Corporation, November 8, 2010 ..... 2.0-346

C3 Cam Noltemeyer, Santa Clarita Organization for Planning and the Environment, November 9, 2010 ... 2.0-348
C4 Letter from Friends of the Santa Clara River, Ron Bottorff, November 1, 2010 ... 2.0-351
C5 Jason Weiner, Ventura Coastkeeper, November 8, 2010 ... 2.0-387
C6 W. Susie Santilena, Heal the Bay, November 9, 2010 ... 2.0-390
C7 John Shaffery, Santa Clarita Valley Chamber of Commerce, November 8, 2010 ... 2.0-392
C8 Antonio Gonzalez, Santa Monica Mountains Conservancy, November 8, 2010 (Renumbered as A7) ... 2.0-394
C9 Bill Gonzalez, Tribal Historic & Cultural Preservation, November 9, 2010 ... 2.0-395
C10 Letter from Ventura Coastkeeper (Jason Weiner, M.E.M.), dated January 3, 2011 ... 2.0-397
C11 Letter from Ventura Coastkeeper (Jason Weiner, M.E.M.), dated January 4, 2011 ... 2.0-518
C12 Matthew Vespa, Center for Biological Diversity, January 4, 2011 ... 2.0-549
C13 Katherine Squires, Sierra Club, January 3, 2011 ... 2.0-673
C14 Lynne Plambeck, Santa Clarita Organization for Planning and the Environment, January 2, 2011 ... 2.0-749
C15 Carolee Krieger, California Water Impact Network, January 4, 2011 ... 2.0-783
C16 Ron Bottorff, Friends of the Santa Clara River, January 3, 2011 ... 2.0-992
C17 Letter from Castaic Lake Water Agency (CLWA), dated January 13, 2011 ... 2.0-1075
C18 Jan de Leeuw, TriCounty Watchdogs, January 20, 2011 ... 2.0-1079
C19 Ron Bottorff, Friends of the Santa Clara River, January 3, 2011 ... 2.0-1107
C20 Ron Bottorff, Friends of the Santa Clara River, January 3, 2011 ... 2.0-1110
C21 Ron Bottorff, Friends of the Santa Clara River, January 3, 2011 ... 2.0-1113
C22 Letter from Santa Clarita Organization for Planning and the Environment, Lynne Plambeck, March 16, 2011 ... 2.0-1116
C23 Letter from Ventura County Agricultural Water Quality Coalition, April 27, 2011 ... 2.0-1131

D. Private Citizens

D1 Malcolm Blue, November 8, 2010 ... 2.0-1147
D2 Randy Martin, November 10, 2010 ... 2.0-1149
D3 Barbara Wampole, November 9, 2010 ... 2.0-1152
D4 Colleen Knopf, November 8, 2010 ... 2.0-1155
D5 Sandra Knopf, November 9, 2010 ... 2.0-1160
D6 Carol Winkler, November 8, 2010 ... 2.0-1162
D7 Carole Lutness, November 8, 2010 ... 2.0-1164
D8 Isaac Lieberman, November 8, 2010 ... 2.0-1166
D9 John Paladin, November 8, 2010 ... 2.0-1168
D10 Heather Wylie, November 9, 2010 ... 2.0-1173

Attachments to Letters C10 through C14 and C19 through C21 Provided on CD ... 2.0-1175

3.0 HEARING TESTIMONY AND RESPONSES ... 3.0-1

Volume II

4.0 REVISED DRAFT EIR PAGES ... 4.0-1

5.0 MITIGATION MONITORING PLAN ... 5.0-1

Appendices

Volume III

F1.0 Introduction Support Documentation
Land Use Plan Statistical Summary Table (Table 5.4-1 of the Specific Plan)
Park and Recreation Improvements Summary (Table 5.4-2 of the Specific Plan)
Infrastructure, Community Amenities, and Entitlements Status Summary (Table 5.4-3 of the Specific Plan)
CBRE Letter to Alex Herrell, January 18, 2011
Final Newhall Ranch Resource Management and Development Plan (Dec 3, 2010)
Final Spineflower Conservation Plan (Dec 3, 2010)
CDFG approved Master Streambed Alteration Agreement
CDFG-approved California Endangered Species Act Incidental Take Permit No. 2081-2008-012-05 (SCP spineflower)
CDFG-approved California Endangered Species Act Incidental Take Permit No. 2081-2008-013-05 (RMDP multi-species)
CDFG-approved CEQA findings (December 3, 2010)
CDFG-approved California Endangered Species Act Findings (December 3, 2010)

Volume IV

F1.0 Introduction Support Documentation (continued)
CDFG-approved Mitigation Monitoring and Reporting Plan and Appendices for the Newhall Ranch RMDP/SCP (December 3, 2010)
CDFG's Final Addendum/Additional Information (November 2010)
CDFG-approved Notice of Determination and Decision (filed December 3, 2010)
Newhall Final EIS/EIR Revised Section 4.1, Surface Water Hydrology and Flood Control
Newhall Final EIS/EIR Revised Section 4.2, Geomorphology and Riparian Resources
Newhall Final EIS/EIR Revised Section 4.6, Jurisdictional Waters and Streams
Table 4.23-8 Project Employment Generation Profile - OVOV General Plan Buildout.
Supplemental Fee Agreement, August 31, 2010

F4.1 Geotechnical and Soil Resources Documentation
Revised Soils Report

F4.2 Hydrology Documentation
Sediment Management Strategic Plan, Strategy 1, June 2005
Sediment Management Strategic Plan, Strategy 2, November 2005
Sediment Management Strategic Plan, Strategy 3, January 2006
Sediment Management Strategic Plan, Strategy 4, March 15, 2006
Long-Term Sediment Management Plan, July 14, 2010
Santa Clara River ML Revision Analysis, Drainage Concept Report (Pace, January 2008)

Volume V

F4.3 Biota Documentation

ENTRIX, Inc., "Focused Special-Status Fish Species Habitat Assessment—Santa Clara River and Tributary Drainages, Newhall Ranch, Los Angeles County, California" (2009).

CDFG letter to Los Angeles County, Samuel Dea, dated March 17, 2010, p. 2

Life Histories of all Special Status Species Potentially Affected by the Newhall Ranch Specific Plan, Including the Mission Village Project

Moilanen - Restoration Ecology, How Much Compensation is Enough? A Framework for Incorporating Uncertainty and Time Discounting When Calculating Offset Ratios for Impacted Habitat

Norton – Biodiversity Offsets: Two New Zealand Case Studies and an Assessment Framework

Volume VI

F4.3 Biota Documentation (continued)

Conceptual Wetlands Mitigation Plan (Dudek 2007)

Corps draft 404 (b)(1) alternatives analysis, p. 55-56

Responses to Letter from Coastal Conservancy, dated August 4, 2010, entitled "Subject: Comments on Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Final EIS/EIR."

Draft Conceptual Wetlands Mitigation Plan for the Mission Village Project, Santa Clara River, Los Angeles County, California (Dudek, May 2011).

F4.5 Traffic/Access Documentation

Excerpt, Draft 2010 Congestion Management Program, Metro, Appendix A, Guidelines for Biennial Highway Monitoring, 2009 CMP Freeway Monitoring Stations and Levels of Service

Excerpt, High Occupancy Vehicle Guidelines for Planning, Design and Operations, Caltrans (August 2003)

Excerpt, Section 4.8, Traffic, Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Environmental Impact Statement/Environmental Impact Report (SCH No. 2000011025)

Traffic and Transportation/Pedestrian and Bicycle Facilities Section, I-5 HOV/Truck Lanes Project SR-14 to Parker Road Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact

I-5 PA&ED HOV & Truck Lanes - SR-14 to Parker Road Traffic Study, Austin-Foust Associations, Inc. (October 2007), pp. 17, 19, 27

District 7 Projects, I-5/SR-14 Direct HOV Connector (Current), Caltrans website accessed 1/31/2011

Mission Village (Newhall Ranch) - I-5 Share Calculations, Austin-Foust Associates, Inc. (March 8, 2011)

Mission Village Traffic Impact Analysis – Existing Plus Project Scenario, Austin-Foust Associates, Inc. (March 1, 2011)

Long-Range Buildout Conditions Without Potrero Canyon Road Bridge, AFA (February 22, 2011)

Volume VI (continued)

F4.5 Traffic/Access Documentation (continued)

Technical Memorandum, Mission Village Revised Project Trip Generation Estimates, Austin-Foust Associates, Inc. (March 8, 2011)

Mission Village Traffic Impact Analysis - Supplemental Freeway Analysis, AFA (November 16, 2010)

Revised Pages, Mission Village Traffic Impact Analysis, AFA (October 2010; March 2011)

Excerpts, North Valencia Annexation Area Traffic Study, AFA (July 31, 1997); North Valencia Specific Plan No. 2 Traffic Study, AFA (March 2, 1999)

One Valley One Vision Valley-Wide Traffic Study, AFA (June 2010)

Mission Village - Response to Comments Analysis Technical Memorandum, Austin-Foust Associates, Inc. (April 29, 2011)

Traffic Mitigation Agreement Fair Share Payment, Austin-Foust Associates, Inc.

F4.6 Noise Documentation

IHC Merwede, IHC Hydrohammer Pile Driving Equipment, 2011. Support Documentation

Volume VII

F4.8 Water Service Documentation

Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, August 3, 2010

Letter from Alex Herrell, Director, Community Development, to Sam Dea, Supervising Regional Planner, Los Angeles County Department of Regional Planning, dated April 7, 2009

Notice of Settlement and Dismissal from Newhall Ranch Specific Plan Program EIR Litigation

Water Quality Data from Newhall Ranch Additional Administrative Record (AAR-107:116214-276)

Applicant's letter to the County, along with a letter from the Semitropic Water Storage District dated Feb. 22, 2010

Revised U.S. EPA Permit Application for Class I Non-Hazardous Injection Well(s) Area Permit," prepared by WZI, Inc., dated November 2008

Table 6 of DWR Bulletin 123-09

Provost & Pritchard, November 23, 2002. Evaluation of Available Capacity in the California Aqueduct from Reach 10A to Reach 30

Smelt Opinion (United States District Court)

F4.9 Wastewater Disposal Documentation

Interconnection Agreement Between County Sanitation Districts Nos. 26 and 32 of Los Angeles County and the Newhall Land and Farming Company

F4.16 Agricultural Resource Documentation

California Resources Agency, memorandum dated May 4, 2005 (regarding the CEQA review of projects affecting agricultural resources)

Volume VII (continued)

F4.19 Environmental Safety Documentation
Limited Soil Vapor Survey dated April 2011

F4.20 Cultural/Paleontological Resources Documentation
Corps-SHPO-Newhall Programmatic Agreement

F4.22 Water Quality Documentation
Memorandum Attachments, "Upper Santa Clara River Chloride TMDL Reconsideration and Conditional Site Specific Objectives for Chloride and Interim Wasteload Allocations for Sulfate and Total Dissolved Solids Staff Report"
Final California 2010 Integrated Report
Weather Station Data (instream monitoring data collected by VCK)
Heal the Bay letter and the County's responses to the letter
Assessment of Future Surface Water Conditions in the Dry Gap of the Santa Clara River
SCVSD memorandum to the County Board of Supervisors, dated March 8, 2011
Geosyntec evaluated the Horner study, Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices, (Geosyntec, 2008)
GSI Water Solutions, Inc., Assessment of Future Surface Water Conditions in the Dry Gap of the Santa Clara River (April 2008)
Antecedent Rainfall versus Algal Mat
Responses to Comments from Letter from Friends of the Santa Clara River, January 21, 2007
Responses to Comments from Letter from California Regional Water Quality Control Board – Los Angeles Region, January 22, 2007
Responses to Comments from Letter from County of Ventura, Resource Management Agency, January 19, 2007
LID Water Quality Modeling Methodology (Addendum to Apx B of the Mission Village Water Quality Technical Report, Sept 2010)
Mission Village LID Performance Standard
The Sanitation Districts' memorandum, along with the SCOPE letter and transcript of the oral testimony
Final responses to the letter from RWQCB dated August 3, 2010
Responses to comments from letter from USEPA dated August 6, 2010
Substitute Environmental Document for the Upper Santa Clara River Chloride TMDL Reconsideration and Conditional Site Specific Objectives

F4.23 Global Climate Change Documentation
Newhall Ranch Villages Mixed-Use VMT Estimate Memorandum (Fehr & Peers, March 11, 2011)

CDFG letter to Los Angeles County, Samuel Dea,
dated March 17, 2010, p. 2

Letter No. A1

California Natural Resources Agency
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ARNOLD SCHWARZENEGGER, Governor
JOHN MCCAMMAN, Director

March 17, 2010

Samuel Dea, Supervising Regional Planner
County of Los Angeles, Department of Regional Planning
Special Projects Section, Room 1362
320 West Temple Street
Los Angeles, CA 90012
Fax #: (213) 626-0434

Re: Recirculation of the Draft Environmental Impact Report for the Landmark Village Project; County Project No. 00-196; State Clearinghouse No. 2004021002

Dear Mr. Dea:

The California Department of Fish and Game (Department) appreciates the opportunity to provide comments on the Recirculated Draft Environmental Impact Report (Recirculated Draft EIR) for the Landmark Village project. The Department is California's trustee agency for fish and wildlife resources, holding these resources in trust for all the people of the State pursuant to various provisions of the California Fish and Game Code. (See, e.g., Fish & G. Code, §§ 711.7, subd. (a), 1802.) 1

The biological trust resources at issue with the proposed Landmark Village project are also the current subject of a related, much broader environmental review and permitting effort being conducted by the Department and U.S. Army Corps of Engineers (Corps) acting as co-lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), respectively. (State Clearinghouse No. 200011025.) The Department currently expects to complete that effort some time this summer. 2

The Landmark Village project is located within the 292.6-acre Landmark Village tract map site, which is the first phase of the approved Newhall Ranch Specific Plan (Specific Plan). To facilitate development of the Landmark Village tract map site, several off-site project-related components would be developed on an additional 770.8 acres of land, including some infrastructure improvements within the Los Angeles County River Corridor Special Management Area/Significant Ecological Area 23 (River Corridor SMA/SEA 23). This area encompasses portions of the Santa Clara River, located along the southern boundary of the Landmark Village tract-map site. The Landmark Village project site is located in northwestern unincorporated Los Angeles County, within the Santa Clarita Valley Planning Area, and within the approved Specific Plan boundary. Specifically, the project site is located north and south of the Santa Clara River, north and south of State Route 126 (SR-126), east of the Ventura County/Los Angeles County boundary line, and west of Interstate 5 (I-5). The project site supports a varied and unique diversity of wildlife and botanical species, and supports or has the potential to support several rare, threatened and endangered plants and wildlife species. 3

The Department submits these comments in its capacity as a trustee agency under CEQA and the Fish and Game Code. (Pub. Resources Code, § 21070; Fish & G. Code, § 1802.) Given its related permitting authority under the California Endangered Species Act (CESA) and Fish and Game Code section 1600 et seq., the Department also submits these comments as a responsible agency under CEQA. (Pub. Resources Code, § 21069.) In addition, as mentioned above, the Department is submitting these comments against the backdrop of its own lead 4

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agency review and ongoing permitting effort related to the County-approved Specific Plan and other properties owned by the project proponent. (See *Id.*, § 21067.) In that context, importantly, the Department's permitting authority is prescribed specifically by the Fish and Game Code. (*Id.*, § 21004.) 4

The County, in contrast, is the local land use authority with respect to the Specific Plan, the Landmark Village project specifically, and all other county land. The Department acknowledges, in this respect, that the County has plenary land use authority to proceed with its review of the Landmark Village project at this or any other time. 5

The Department's comments regarding the Recirculated Draft EIR are set forth below. In making these comments, the Department reserves the right to submit additional written comments prior to any final action by the County Board of Supervisor's related to the proposed Landmark Village project. 6

The Department believes the County should consider additional, potentially feasible biological mitigation measures as it moves forward with its review of the proposed project. These additional mitigation measures should be incorporated into Section 4.4 (Biota) of the Recirculated Draft EIR, or otherwise made a condition of project approval by the County. Such additional, potentially feasible mitigation measures include, but are not limited to the following: 7

1. The County should consider opportunities to increase the setback and/or buffers from existing riparian habitat and Spineflower preserve areas identified as part of the Department's ongoing review and permitting effort discussed above. These setback or buffer areas should be separate from any proposed Fuel Modification Zone.

2. In the SMA/SEA 23 River Corridor, the County should consider restoration requirements, mitigation accountability and reporting, long-term management and protection measures (e.g., conservation easements). 8

3. The County should consider avoidance, minimization, and/or compensation measures to reduce impacts to sensitive aquatic, and semi-aquatic species, and riparian resources consistent with the following: 9

   - Buried bank stabilization should be outside of the Department's stream jurisdiction under the Fish and Game Code, except where it connects to existing bridge abutments;
   - Utilities which cross the river should be placed on the bridge structures; if this is not feasible, Micro-tunneling or Horizontal Directional Drilling should be used; 10
   - Trail system(s) should be designed outside of the Department stream jurisdiction, including riparian areas; 11
   - Culverts or other instream devices should be designed to prevent flow restriction or provide aquatic species movement; 12
   - Dewatering and diversion plans should be prepared if construction activities are to occur in areas of flow (surface or subsurface); 13
   - Street lighting and signage in areas in close proximity to the river corridor should be designed to minimize perching of predatory bird species in order to reduce potentially significant impacts to listed and other special status bird species; 14
   - The proposed fire station should be relocated away from the Santa Clara River and Chiquito Canyon Creek to minimize noise and disturbance to riparian resources; and 15
   - Replacement or compensation mitigation should be required for temporary and permanent disturbance to the river and tributaries; 16

4. The County should consider avoidance, minimization, and/or compensation measures to reduce impacts to sensitive vegetation communities consistent with the following: 17
   - Replacement or compensation mitigation should be established for temporary and permanent disturbance to wildlife habitat, including impacts to oak woodlands, grasslands, and coastal sage scrub; 18
   - Habitat mitigation and other sensitive biological resource areas, and Spineflower preserves, should be signed to avoid disturbance; 19
   - Borrow sites should be designed to avoid impacts to Spineflower; and 20
   - Disturbed areas should be restored with native habitat.
5. The County should identify habitat restoration/enhancement areas. 21
6. The County should consider incorporating bat roosting opportunities (bat houses) for all bat species within or on bridge structures. 22
7. The County should consider wildlife movement areas and related mitigation opportunities. 23

The Department also requests the opportunity to review the added measures after they are incorporated into the Recirculated Draft EIR. 24

The Department appreciates the opportunity to comment on the Recirculated Draft EIR. If you have any questions or comments regarding this letter or if further input from the Department would be helpful, please contact Betty Courtney at (661) 263-6306. 25

Sincerely,

Edmund Pert
Regional Manager
South Coast Region

cc: Ms. Helen Birss, Los Alamitos
Ms. Betty Courtney, Newhall
Mr. Dennis Bedford, Los Alamitos
Ms. Karen Drewe, San Pedro
State Clearinghouse, Sacramento

Life Histories of all Special Status Species Potentially Affected by the Newhall Ranch Specific Plan, Including the Mission Village Project

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~~*Pyrgulopsis castaicensis* **n. sp.**	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

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
San Diego black-tailed jackrabbit	CSC	Mammal – Moderate Mobility
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)
Trask shoulderband snail	Special Animal	Mollusk
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

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
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
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

Table 4.5-54
Special-Status Species Organized by Status and Guild

Common Name	Status for this Species	Guild
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
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.

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

[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).

(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).

<u>Impacts</u>

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 be 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~~River corridor 100-year floodplain would remain approximately ~~1,000~~ 700 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival

during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 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 SMA. 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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower

preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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.

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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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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, Draft EIS/EIR, **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~~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 R~~r~~iver corridor 100-year floodplain ranges between approximately ~~1,000~~700 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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2. 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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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.

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.

<u>Mitigation Strategy and Summary</u>

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. Additional 2009 flight data provided to CDFG by the USFWS indicate that the condor frequently flies over the Project area when moving between the Sespe Wilderness area to the northwest and the San Gabriel Mountains to the southeast of the Project area and that the species appears to be increasing its use of the Santa Clarita Valley area. ~~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. However, with increasing use of the Santa Clarita Valley area, it is expected to continue to forage opportunistically in portions of the Project area for dead cattle and other large mammal carcasses. Because this species has the potential to periodically land anywhere within the Project area where carrion is present, suitable ~~nesting~~ roosting 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~~ abundant prey (*i.e.*, cattle and large mammal carcasses). 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 directly observed on two separate occasions: ~~since~~ April 2008 and January 2009 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 between April and July 2008 (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, based on 2009 flight data, condors are increasing their current range and moving into areas not recently inhabited by this species. ~~Therefore,~~ B~~b~~uild-out of the Specific Plan, VCC, and Entrada planning areas ~~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 on two occasions. 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~~ opportunistically forage over suitable habitat within and adjacent to build-out areas, as evidenced by the ~~single~~ observations of ~~a~~ feeding condors in April 2008 and January 2009 ~~in a Potrero side canyon~~ in the Potrero Canyon area (Carpenter 2008; Niemela 2009) and other documented landings in the Project area between April and July 2008 (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~~2008, condors have not been detected landing in the Project area. There are two observations of condors foraging on dead cattle in the Project area in April 2008 (Carpenter 2008) and January 2009 (Niemela 2009) and several birds were~~have been~~ recorded landing in the Project area ~~since~~between April and July 2008 (Root 2008). Therefore, condors are expected to ~~sporadically~~ opportunistically forage in the Project area when carrion (*i.e.*, dead cattle ~~or large wildlife~~and other large mammals) are ~~present~~available. Because this species has been detected in the Project area, 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. BIO-82 also requires the removal of dead cattle from within 1,000 feet of development boundaries to appropriate locations within the High Country SMA or Salt Creek area.

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~~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 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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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. BIO-82 also requires the removal of dead cattle from within 1,000 feet of development boundaries to appropriate locations within the High Country SMA or Salt Creek area.

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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering

the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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. BIO-82 also requires the removal of dead cattle from within 1,000 feet of development boundaries within the High Country SMA or Salt Creek area.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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

initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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.

Revised 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2. Revised 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdictions meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological

conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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~~ 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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.

~~UNDESCRIBED SNAIL SPECIES~~PYRGULOPSIS CASTAICENSIS N. SP. (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 was initially assigned ~~belongs~~ to the genus *Pyrgulopsis* (Hershler 2007), which belongs to the Hydrobiidae (spring snail) family (Liu and Hershler 2007). In 2010, the undescribed species of snail was formally described as *Pyrgulopsis castaicensis* **n. sp.** (Hershler and Liu 2010), and is referred to by its new scientific name herein.

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~~ *Pyrgulopsis castaicensis* **n. sp.** ~~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, *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snails~~ has~~ve~~ 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, *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.**~~the undescribed snail.~~

Survey Results

Comprehensive surveys for *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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, *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snails~~ was~~ere~~ 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 *Pyrgulopsis castaicensis* **n. sp.**~~the undescribed snails~~, ~~the undescribed snails~~ this species 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 *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snails~~ did disperse into the lower-most portion of the Middle Canyon drainage, it is unknown whether the ~~undescribed snails~~species dispersed *via* the Santa Clara River or whether ~~they were~~it was transported to the lower-most portion of the Middle Canyon drainage *via* wildlife, livestock, or anthropogenic action. The locations on the Project site where *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snails~~ has~~ve~~ 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 *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp**. ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp**. ~~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 *Pyrgulopsis castaicensis* **n. sp**. ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snail species~~ prior to the commencement of grading/construction activities in any drainage area supporting perennial flow. Any individuals of *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snail species~~ found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snails~~ is~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snail~~ are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-33 SECONDARY IMPACTS – PYRGULOPSIS CASTAICENSIS N. SP.~~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 *Pyrgulopsis castaicensis* **n. sp.**~~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 *Pyrgulopsis castaicensis* **n. sp.**~~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, document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 *Pyrgulopsis castaicensis* **n. sp.** ~~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 *Pyrgulopsis castaicensis* **n. sp.** ~~the undescribed snail species~~ found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snails are~~ is 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 *Pyrgulopsis castaicensis* **n. sp.** ~~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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to

CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2. 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2. 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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 100-year floodplain would remain approximately ~~1,000~~700 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation

communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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 a 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).

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[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 c~~C~~orridor 100-year floodplain would remain approximately ~~1,000~~700 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined

loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank

stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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~~ corridor 100-year floodplain would remain approximately ~~1,000~~700 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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 ~~C~~corridor 100-year floodplain would remain between ~~1,000~~approximately 700 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 SMA 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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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 corridor 100-year floodplain ranges between approximately ~~1,000~~700 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.

<u>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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.</u>

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in

revised BIO-2. 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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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~~in perpetuity.

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 corridor 100-year floodplain ranges between approximately ~~1,000~~700 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.

<u>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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; be present during initial vegetation clearing and</u>

grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

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-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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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-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. During construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures), these species will be controlled. 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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, cist-montane 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to

CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to

CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. For permanent and temporary impacts to CDFG jurisdiction, vegetation communities meeting success criteria in advance of disturbance: 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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

initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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.

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[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; <u>document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities;</u> 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating

landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating

landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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 f~~ollowing the completion and occupancy of a~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and

roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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.

<u>Mitigation Strategy and Summary</u>

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; <u>document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities;</u> 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrological conditions in the preserves; and (6~~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~~ upon initiating landscaping within 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~~in perpetuity.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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.

<u>Mitigation Strategy and Summary</u>

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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.

<u>Mitigation Strategy and Summary</u>

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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~~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 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	Acres of Area Occupied by SFVS with Buffer of			
Location	**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~~in perpetuity 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~~in perpetuity 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~~in perpetuity 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 and~~;~~ enhancement of degraded habitats within the SFVS preserves to allow for natural expansion of cumulative occupied area. In addition, ~~; and active efforts to expand, restore, or create SFVS occurrences~~a spineflower enhancement program

may be implemented within the preserve areas. ~~In addition, p~~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 p~~Project-related direct and indirect significant impacts to SFVS ~~cannot~~ would be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s) and through other avoidance, minimization, or other compensatory mitigation measures~~,~~. In addition, a ~~translocation and reintroduction~~spineflower enhancement program may be implemented. The system of spineflower preserves, along with the long-term monitoring and management program and the ~~translocation and reintroduction~~enhancement 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 s~~Secondary impacts to SFVS ~~cannot~~ would be avoided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s) and other avoidance, minimization, or other compensatory mitigation measures. In addition, a ~~translocation and reintroduction~~ spineflower enhancement 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. 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. Controls will be implemented using an Integrated Pest Management (IPM) approach and will likely require a combination of methods, including cultural (*e.g.*, planting pest-free stock plants), mechanical (*e.g.*, weeding, trapping), and biological controls (*e.g.*, natural predators or competitors of pest species, insect growth regulators, natural pheromones, or biopesticides), and the judicious use of chemical controls, as appropriate (*e.g.*, targeted spraying versus broadcast applications). The IPM will establish management thresholds (*i.e.*, not all incidences of a pest require management); prescribe monitoring to determine when management thresholds have been exceeded; and identify the most appropriate and efficient control method that avoids and minimizes risks to natural resources. Preparation of the CC&Rs for each tract map shall include language that prohibits the use of anticoagulant rodenticides in the Project site. 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 Pproject 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. Where feasible, and/or appropriate, dry areas such as parking lots and roadways shall be built next to preserve boundaries. These will be designed to slope away from the preserve to avoid runoff entering the preserve.
3. Pedestrian pathways placed next to preserves shall consist of decomposed granite or other gravel to minimize the holding of moisture, thereby preventing establishment of suitable habitat for Argentine ant colonies.
4. 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;
5. 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 during construction. Measures intended to maintain the existing hydrology of the spineflower preserves are discussed in more detail in the subsection, *Changes in Hydrology*, below; and
6. 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 Draft SCP (Dudek 2007E) and **Appendix D** of the Revised Draft SCP (Dudek 2010).

The proposed SCP, which incorporates the aforementioned mitigation measures, will require quarterly monitoring in perpetuity 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~~upon initiating landscaping within 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, the judicious use of chemical controls, as appropriate (e.g., targeted spraying versus broadcast applications)~~focused broadcast application of insecticides over large infested areas~~, or available natural control methods being developed. Pesticide use shall be limited to within 200 feet of preserves and inside preserves. 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~~ 500 feet of spineflower preserves. The spineflower preserve manager or a qualified biologist shall monitor fence installation. Vegetation c~~C~~learing 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. The fencing shall be maintained in perpetuity by the preserve manager through funding provided by the Project applicant or its designee.

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 (including~~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) and in other fuel modification zones adjacent to preserves, a temporary drip irrigation system will be installed to the satisfaction of the County in order to establish the vegetation in these~~on the slope~~ area(s). This system shall continue only until the slope vegetation is established and self sustaining. A smart irrigation system will be employed so that irrigation rates are tied to rainfall, humidity, and soil moisture. This will limit the amount of water distributed in the drip irrigation system. 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:~~ Any surface water entering a spineflower preserve area from development areas during construction is required to pass through BMP measures, which will be described in the SWPPP. Storm drain outlets must contain hydrologic controls (*e.g.*, 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 hydrologic studies (in accordance with Newhall Ranch Specific Plan EIR Mitigation Measure SP-4.6-69). Storm drains and permanent structural BMPs 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 manager or qualified biologist. Long-term maintenance of storm drain BMPs will be the responsibility of the designated maintenance entity.

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 during construction 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. The preserve manager will contact the LACFD at least once every 5 years to review the plan and consult with them on implementation of the plan.

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). Rundel (2007) reports that there are differential resprouting rates that have been observed, with light fires allowing for more resprouting and heavier fires resulting in more limited resprouting. Post-fire recovery may also depend on seed dispersal from outside the burn areas, from wind-dispersed sage scrub species (Rundel 2007). Given the fire protection in the surrounding areas, it is anticipated that any fires in the preserves would be lighter rather than heavier. Therefore, it is not anticipated that burned areas would~~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.~~ Following a fire or landslide, the preserve manager will assess habitat damage

and the likelihood of natural recovery. As needed, the preserve manager may implement reseeding, erosion control, or other measures.

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. Whenever possible, erosion control upstream and downstream from preserve boundaries would be given priority, and physical erosion control barriers would be utilized outside the boundaries of the preserve areas wherever feasible. 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 spineflower preserve areas behind the temporary fencing shall not be accessed by construction personnel or equipment for any reason and 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; public access will be prohibited. 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. Signage and fencing will be installed along the dirt road within Humble Canyon in the Grapevine Mesa Preserve. 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.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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, 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 spineflower preserve areas behind the temporary fencing shall not be accessed by construction personnel or equipment for any reason and 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~~ 500 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, BIO-32, 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), and Argentine ant monitoring into construction plans and requiring weekly construction monitoring for all construction activities within ~~200~~ 500 feet of spineflower preserve areas.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; be present during initial vegetation clearing and grading; and provide reports of any conflicts or errors resulting in impacts to special-status biological resources.

Preserve Protection/Invasive Plants and Animals

BIO-34 requires plant palettes proposed for use within ~~100~~ 200 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; public access will be prohibited. 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. Signage and fencing will be installed along the dirt road within Humble Canyon in the Grapevine Mesa Preserve. 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 during construction 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) building dry areas such as parking lots and roadways next to preserve boundaries, and sloping these areas away from the spineflower preserves; (3) constructing pedestrian pathways next to preserves out of decomposed granite or other gravel to minimize the holding of moisture; (~~2~~4) ensuring that landscape container plants installed within 200 feet of preserves are ant free; (5~~3~~) maintaining natural hydrologic conditions in the preserves; and (6~~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~~upon initiating landscaping within 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~~in perpetuity.

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.

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 permanent impacts to Corps jurisdiction, the combined

loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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, document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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

initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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.

<u>Mitigation Strategy and Summary</u>

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, <u>document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities;</u> 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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~~ spring snail (*Pyrgulopsis castaicensis* **n. sp.**) and undescribed 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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; document that all vehicles

and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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, document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 revised 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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.

<u>Mitigation Strategy and Summary</u>

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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction

and construction activities; 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival

during Project preconstruction and construction activities; 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 2~~1~~00 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 2~~1~~00 feet of the open space areas shall be inspected for pests and disease. Invasive landscape plants shall not be used within 2~~1~~00 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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

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 Newhall Ranch JPA and~~Project applicant~~/or NLMO 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 permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. ~~Attainment of~~ Not meeting 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2.

TRASK SHOULDERBAND SNAIL (CALIFORNIA SPECIAL ANIMAL)

Life History

The Trask shoulderband snail (*Helminthoglypta traskii traskii*) has been documented in scattered locations in coastal Southern California. The Santa Barbara Museum of Natural History (2010) contains four vouchered specimens collected from Oceanside (no collection date), Ranchos Palos Verdes collected in 1984, Point Fermin in San Pedro (no collection date), and in Pine Canyon, Sespe Creek (no collection date). In addition, one gastropod shell tentatively identified as Trask shoulderband snail (*Helminthoglypta traskii*) was collected from Potrero Canyon in 2005; however, it was not possible to identify this specimen to the subspecies level without the living organism. Magney (2009) lists several locations for the subspecies, including three locations in Kern County, including the Tehachapi Mountains, the San Emigdio Range, and Temblor Ranch; 13 locations in Los Angeles County, including locations on the Palos Verdes Peninsula, Point Fermin, Elysian Park, Millards Canyon in the San Gabriel Mountains, San Fernando Valley, Los Angeles Plain, Arroyo Seco in the San Gabriel Valley, Hermosa Beach, and El Segundo), Orange County (no location provided); Reche Canyon in western San Bernardino County; Oceanside, De Luz, Coronado Island, and San Diego in San Diego County; Oso Flaco Lake in San Luis Obispo County; Santa Ynez Mountains in Santa Barbara County; and the Oxnard Plain, Tierra Rejada Valley, Santa Clara River Valley at Barsdale near Fillmore, Santa Paula Ridge, and one other record with no location in Ventura County. The CNDDB has one record for the subspecies from La Jolla Canyon in the Santa Monica Mountains at Point Mugu State Park observed in February 2008 ascending a waterfall (CDFG 2010). The subspecies also is reported from northwestern Baja California, Mexico.

The ecology and distribution of terrestrial land snails, including shoulderband snails in most of Southern California, are poorly understood. This may be in part because native terrestrial snails are highly cryptic, extensive surveys for these groups have not been systematically conducted, and, with the exception of a few species or subspecies, such as the *traskii* subspecies of Trask shoulderband snail, are not considered special status by the CDFG or USFWS. The available literature indicates that Trask shoulderband snail, including the *traskii* subspecies, occurs in areas supporting coastal scrub, riparian, and chaparral communities.

Terrestrial snails in general have low mobility and most movement is related to foraging and reproduction (NatureServe 2010). Food finding primarily is by smell and typically occurs at the scale of centimeters to a meter (NatureServe 2010). However, the movement and dispersal capabilities of the Trask shoulderband snail, including the *traskii* subspecies, are unknown. The diet of the Trask shoulderband snail, including the *traskii* subspecies, is unknown, but terrestrial snails often feed on detritus, which is particulate organic matter derived from the decomposition of plant and animal remains. Another Helminthoglyptid taxon, the federally listed endangered Morro shoulderband snail (*H. walkeriana*), may feed on fungal mycelia (web or mats of non-reproductive fungal strands) that grows on decaying plant litter (USFWS 1998C).

Reproduction by Trask shoulderband snail, including the *traskii* subspecies, is also unknown, *Helminthoglypta* are hermaphroditic, exhibiting simultaneous reciprocal mating, and lay eggs (USDA 2004; NatureServe 2010; Davison 2007. Most *Helminthoglypta* species live several years and may reproduce multiple times (USDA 2004; NatureServe 2010).

Threats

Specific threats to the Trask shoulderband snail subspecies *H. t. traskii* have not been identified, but the list of historical occurrence locations, especially in urbanized areas of Los Angeles County, indicate that the main threat to this subspecies is habitat loss and fragmentation. As noted above, terrestrial snails have generally very low mobility and thus probably are highly vulnerable to habitat fragmentation. The Recovery Plan (USFWS 1998C) for the Morro shoulderband snail identified several threats that could be relevant to Trask shoulderband snail subspecies *H. t. traskii*, including habitat loss to development, off-road vehicles that can crush individuals and damage vegetation and soil structure, altered fire cycles, cattle grazing, and non-native plant species, including annual grasses. Potential additional threats include Argentine ants; other introduced non-native snails such as decollate snails; degradation of microhabitat by human activity and pet, stray, and feral cats and dogs; and pesticides that may cause direct poisoning of snails.

Survey Results

Surveys of the Project area and potential habitat in surrounding areas were conducted on five days between November 2009 and January 2010 (C. Huntley, pers. comm. 2010). Surveys were conducted in a broad array of habitat types, including, but not limited to, California annual grassland, coastal scrub, riparian woodland, riparian scrub, big sagebrush scrub, mulefat scrub, oak woodland, and chaparral. Surveys focused on microhabitats within these communities where these species have the potential to occur. Surveyed microhabitats included, but were not limited to, brush and debris piles, rock piles, isolated rocks, leaf litter, logs, trash/debris piles, and other unique features that may provide soil moisture or refugia. These areas were searched by raking through leaf and stick litter, visually inspecting cracks and crevices, and turning over objects, such as logs and rocks. Specimens were tentatively identified in the field by Lawrence Hunt, and then sent to Dr. Barry Roth, a *Helminthoglypta* snail expert located at the California Academy of Science in San Francisco, California, for positive identification.

The surveys for the Trask shoulderband snail, including the *traskii* subspecies, were negative. However, as described above in **Subsection 4.5.3.4.3.1**, three non-special-status shoulderband snail species were detected in the Project area or surrounding areas. These included specimens tentatively identified as Southern California shoulderband snail, Vasquez rocks shoulderband snail, and Grapevine shoulderband snail. Based on these survey results, the presence of coastal scrub, riparian and chaparral vegetation communities, and the occurrence of the Trask shoulderband snail downstream along the Santa Clara River in the Fillmore area, it was

concluded that the Trask shoulderband snail subspecies *H. t. traskii* potentially occurs in the Project area.

It should be noted that the series of recent fires on and around Newhall Ranch likely have severely reduced or eliminated terrestrial snail populations by removing or altering their habitat, specifically microhabitats, such as decaying yucca clumps, downed wood, stick litter around the bases of trees and shrubs, and woodrat nests. These specialized microhabitats appear to offer high refugia value to helminthoglyptids, and local population densities may rise or fall on the availability of these specialized microhabitats. The recovery of helminthoglyptid populations is probably closely linked to the recovery of scrub or woodland habitats altered or destroyed by fire, which may require decades to achieve.

If present, the Trask shoulderband snail subspecies *H. t. traskii* likely would be limited to the small microhabitats described above that occur within the coastal scrub, riparian, and chaparral vegetation communities. Because Trask shoulderband snails in general are associated with specific microhabitats, their total suitable habitat on site was not quantified.

The impacts and mitigation strategy discussed below refers to the special-status Trask shoulderband snail subspecies *H. t. traskii*.

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

Direct permanent and temporary impacts to microhabitats potentially supporting the Trask shoulderband snail would occur if the species is present on site. This species has been reported to occur in a scattered distribution in coastal Southern California and northern Mexico, and its current distribution is poorly understood. Permanent loss and/or temporary impacts to microhabitats that would occur as a result of construction and/or grading activities could substantially reduce the available habitat for this species during construction of RMDP facilities if the species is present on site. These permanent and

temporary impacts therefore 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; 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

Indirect permanent impacts to microhabitats potentially supporting the Trask shoulderband snail would occur as a result of build-out of the Specific Plan, VCC, and Entrada planning areas if the species is present on site. This indirect loss of microhabitats would likely be greater than the direct loss associated with implementation of the RMDP because of the much larger footprint of the indirect impacts, and therefore could 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 significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

The combined direct and indirect loss of microhabitats potentially supporting the Trask shoulderband snail would have a substantial adverse effect on the species, if present on site. The combined direct and indirect permanent impacts (Loss of Habitat) would be significant, absent mitigation.

Impacts to Individuals

Direct Permanent and Temporary Impacts

If Trask shoulderband snails are present in the Project area, construction activities would result in the loss of individual snails through mechanical disturbance or alteration of habitat. Although the loss of individuals would occur, if the species is present, Trask shoulderband snails would be expected to occur intermittently within the Project area in small microhabitats. However, this loss of habitat would have a substantial adverse effect on the distribution of this species on site, 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.

Indirect Permanent Impacts

The potential for indirect permanent impacts to individuals is the same as described above for direct impacts to individuals. These indirect permanent impacts (Impacts to Individuals), should they occur, 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 this species in suitable habitat adjacent to construction zones. These impacts could include exposure to construction-related dust and ground vibration that could inhibit the species from using suitable habitat for refugia, foraging, and reproduction.

Potential long-term secondary effects to this species may occur, including habitat fragmentation; off-road vehicles; cattle grazing; altered wildfire regimes; invasive plant species; increased human activity; Argentine ants; other introduced non-native snails such as decollate snails; increased activity by pet, stray, and feral cats and dogs; and pesticides.

Potential short-term and long-term secondary impacts would have a substantial adverse effect on this species, if present on site; 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

Similar to Alternative 2, Alternatives 3 through 7 would result in direct permanent loss and temporary disturbance of microhabitats for the Trask shoulderband snail, although overall impacts to coastal scrub, riparian, and chaparral vegetation communities are smaller under Alternatives 3 through 7. Alternative 7 would likely have the smallest amount of permanent impacts and greater temporary impacts to Trask shoulderband snail microhabitats compared to the other alternatives, primarily due to the pullback of RMDP facilities from the Santa Clara River and its tributaries. Because of the rarity of this species, however, the impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Indirect Permanent Impacts

Similar to Alternative 2, Alternatives 3 through 7 would result in indirect permanent loss of microhabitats for the Trask shoulderband snail, although overall impacts to coastal scrub, riparian, and chaparral vegetation communities are smaller under Alternatives 3 through 7. Alternative 7 would likely have the smallest amount of permanent impacts to Trask shoulderband snail microhabitats compared to the other alternatives. Because of the rarity of this species, however, the impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Combined Direct and Indirect Permanent Impacts

Similar to Alternative 2, Alternatives 3 through 7 would result in permanent loss of microhabitats for the Trask shoulderband snail through the combined direct and indirect impacts, although overall impacts to coastal scrub, riparian, and chaparral vegetation communities are smaller under Alternatives 3 through 7. Alternative 7 would likely have the smallest amount of permanent impacts to Trask shoulderband snail microhabitats compared to the other alternatives. Because of the rarity of this species, however, the combined direct and indirect permanent impacts under Alternatives 3 through 7 would be significant, absent mitigation.

Impacts to Individuals

The potential for impacts to Trask shoulderband snail individuals, if present on site, 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. Impacts to individuals would be significant, absent mitigation, for Alternatives 3 through 7.

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, 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. Therefore, 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 impacts to the Trask shoulderband snail: (1) impacts to individuals; (2) loss of suitable habitat; and (3) secondary impacts to individuals and habitat outside the Project footprint.

The Trask shoulderband snail has not been documented in the Project area, but suitable habitat is present on site that contains microhabitat areas (*e.g.*, brush, rocks, debris piles, woodrat nests, logs). These microhabitats have the potential to support the Trask shoulderband snail and are known to support at least two other non-special-status shoulderband snails tentatively identified as Southern California shoulderband snail and Vasquez rocks shoulderband snail (see **Subsection 4.5.3.4.3**, General Wildlife, for discussion of terrestrial mollusks). If the Trask shoulderband snail were to occur in construction areas, impacts to individuals would occur during vegetation clearing and construction/grading activities. Construction activities may also affect habitat quality and disrupt behavior from fugitive dust and ground vibration. The combined permanent loss of microhabitats for the Trask shoulderband resulting from implementation of the RMDP and build-out of the Specific Plan, VCC (Alternatives 2 and 3 only), and Entrada planning areas would be a substantial loss of suitable habitat for this species and could alter its use of the Project area, if it is present.

Trask shoulderband snails, if present, would be expected to be broadly distributed across the Project area in coastal scrub, riparian, and chaparral vegetation communities but limited to discrete microhabitats. Because the ecology of this species is linked to the availability of microhabitats, the primary mechanism for mitigating loss of this species and its habitat is the dedication and management of natural lands, including the River Corridor SMA, High Country SMA, and Salt Creek area. These mitigation lands combined comprise approximately 6,300 acres and provide good quality habitat that could support Trask shoulderband snails, if present. These lands would be preserved and managed in perpetuity. These lands contain a suite of topographical features, including rocky outcrops, canyons, and drainages; all features where helminthoglyptid species have been documented in the literature. In addition, these areas support a variety of vegetation communities and provide large areas of open space that would allow for gene flow between watersheds or populations.

While it is likely that some individual snails, if present, would be subject to mortality during vegetation clearing and/or grading activities, specific mitigation to identify or relocate these species is not warranted or feasible. Shoulderband snails are difficult to detect and occur in limited areas, and field identification to the species and subspecies levels is not possible. In addition, if present, Trask shoulderband snails probably would be sympatric with several other non-special-status shoulderband snail species. However, to further reduce potential impacts to individual snails from the loss of habitat during construction activities, the Project applicant would implement existing mitigation measures that include identifying the proposed construction boundaries prior to construction to prevent inadvertent loss of habitat.

With regard to secondary effects, the Trask shoulderband snail could be adversely affected in the short term by construction-related dust and ground vibration, which could degrade refugia microhabitats and disrupt foraging and reproductive behavior. These short-term construction-related secondary impacts would be minimized by providing for dust control and setbacks from potential occupied sites, such as woodrat nests. Long-term development-related impacts include

habitat fragmentation; altered wildfire regimes; cattle grazing; non-native plants; increased human activity; Argentine ants**;** other introduced non-native snails such as decollate snails; and pesticides. These long-term secondary impacts would also be minimized through several mitigation measures, as described below.

Protection, restoration and enhancement, and management of the River Corridor SMA, High Country SMA, and Salt Creek area would provide Trask shoulderband snails, if present, with relatively undisturbed habitat. Limited recreational usage and access restrictions within the High Country SMA; trail signage; and homeowner education regarding special-status resources in preserved natural habitat areas would help protect the Trask shoulderband snail, if present, and its microhabitats. Cattle grazing would be limited to resource management activities in the open space areas, and non-native species controls would be implemented. Open space areas degraded by wildfire would be monitored, and restored as needed, to ensure that they regain their function.

The specific mitigation measures for the Trask shoulderband are listed below and are described fully in **Subsection 4.5.6**, Mitigation Measures.

IMPACT 4.5-186 IMPACTS TO INDIVIDUALS – TRASK SHOULDERBAND SNAIL

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 help avoid impacts to Trask shoulderband snail individuals through pre-development activities.

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 identified one mitigation measure that would help reduce impacts to Trask shoulderband snail 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; document that all vehicles and equipment entering the Project site shall be inspected and verified cleaned upon arrival during Project preconstruction and construction activities; 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 Trask shoulderband snail individuals would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-187 LOSS OF HABITAT – TRASK SHOULDERBAND SNAIL

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 microhabitats for the Trask shoulderband snail through protection, restoration and enhancement, and management of native vegetation communities. This species primarily uses microhabitats within coastal scrub, riparian, and chaparral vegetation communities. Restoration and enhancement, and management of riparian vegetation and associated terrestrial communities in the River Corridor SMA will help 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 communities that could support microhabitat used by Trask shoulderband snail, if present, 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 microhabitats for the Trask shoulderband snail through protection, restoration and enhancement, and management of vegetation communities that support these microhabitats.

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. For permanent impacts to Corps jurisdiction, the combined loss of acreage, functions, and services shall be replaced at a minimum 1:1 ratio, and mitigation shall be initiated in advance of the impacts. Mitigation for permanent and temporary impacts to CDFG jurisdiction meeting success criteria in advance of disturbance: for all vegetation communities = 1:1 ratio. Not meeting success criteria 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 initiated two or more years after disturbance shall require higher mitigation ratios as detailed in revised BIO-2. As noted above, terrestrial habitats used by Trask shoulderband snail 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 Trask shoulderband snail would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

IMPACT 4.5-188 SECONDARY IMPACTS – TRASK SHOULDERBAND SNAIL

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 to the Trask shoulderband snail, including short-term construction activities and long-term effects due to factors such as grazing, off-road vehicles, and invasive plants.

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 Trask shoulderband snail 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, pet, and feral cat and dog activity that could degrade habitat; Argentine ants; and pest control methods, including use of decollate snails and chemical pesticides, which may cause direct 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, BIO-72, BIO-73 and BIO-87 will also be implemented to mitigate impacts related to increases in human activity, pest controls, and Argentine ants:

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 Newhall Ranch JPA and/or NLMO 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 or degradation of habitat, introduction of non-native predators, and poisoning. BIO-64 also requires preparation of an IPM plan that addresses the use of pesticides and other control measures such as decollated snails 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 specifies that container plants for use within 200 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-87 requires, upon initiating landscaping within a development area, 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 in perpetuity.

Finding of Significance for Secondary Impacts After Mitigation

After mitigation, short-term and long-term secondary impacts to Trask shoulderband snail and its habitat would be adverse but not significant for Alternatives 2, 3, 4, 5, 6, and 7.

Conceptual Wetlands Mitigation Plan (Dudek 2007)

Conceptual Wetlands Mitigation Plan

Landmark Village Project

DRAFT

JUNE 2007

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CONCEPTUAL WETLANDS MITIGATION PLAN

for the

LANDMARK VILLAGE PROJECT

Santa Clara River, Los Angeles County, California

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JUNE 2007

Draft Conceptual Wetlands Mitigation Plan
Landmark Village Project
Santa Clara River, Los Angeles County, California

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION.....1
1.1 Background.....1
1.2 Project Description.....1
1.3 Project Location.....3
1.4 Responsible Parties.....3
1.4.1 Applicant Responsibilities.....3
1.4.2 Project Biologist Responsibilities.....3
1.4.3 Restoration Contractor Responsibilities.....5
1.4.4 Construction Documents.....6
1.4.5 As-Built Conditions.....6

2.0 EXISTING CONDITIONS.....6
2.1 Field Reconnaissance.....6
2.2 Existing Plant Communities and Land Covers.....7
2.2.1 Agriculture.....8
2.2.2 California Annual Grassland.....9
2.2.3 Southern Cottonwood–Willow Riparian Forest.....11
2.2.4 Arrow Weed Scrub.....11
2.2.5 Mulefat Scrub.....13
2.2.6 River Wash.....13
2.2.7 Developed Land.....13
2.2.8 Disturbed Land.....14
2.3 Soils.....14

3.0 PROJECT IMPACTS.....15
3.1 Impacts to Vegetation Communities.....15
3.2 Existing Functions and Values of Vegetation Communities to be Impacted.....15
3.2.1 Southern Cottonwood–Willow Riparian Forest.....17
3.3.2 Mulefat Scrub.....18
3.3.3 Arrow Weed Scrub.....18
3.3.4 River Wash.....18

TABLE OF CONTENTS (*Cont.*)

Section **Page**

4.0 MITIGATION PROGRAM 19
4.1 Mitigation Requirements 19
4.1.1 Permanent Impact Mitigation 20
4.1.2 Temporary Impact Mitigation 21
4.1.3 Cumulative Impacts and Mitigation Area Available 21
4.1.4 Specific Project Mitigation Requirements 22
4.2 Goals of the Mitigation Program 22
4.3 Design Approach 22
4.4 Wetlands Creation Design Concept 23
4.4.1 Permanent and Temporary Wetland Impact Mitigation Areas 23
4.4.2 Vegetation Communities to be Created 25
4.5 Rationale for Expecting Project Success 27
4.6 Cost Estimate 30

5.0 MITIGATION IMPLEMENTATION PLAN 31
5.1 Implementation Schedule 31
5.2 Sensitive Species Avoidance and Pre-Construction Wildlife Surveys 32
5.3 Boundary Fencing 33
5.4 Erosion Control – Best Management Practices (BMPs) 33
5.5 Vegetation Mulching 34
5.6 Soil Salvaging 34
5.7 Grading and Site Preparation 35
5.8 Weed Removal 36
5.9 Plant Palette for Mitigation/Revegetation Areas 37
5.9.1 Container Planting 43
5.9.2 Seed Application (Hydroseed and/or Drill Seeding) 44
5.10 Irrigation System 45

6.0 MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD 46
6.1 Maintenance Activities 46
6.2 Weed Control 46
6.3 Trash Removal 47
6.4 Irrigation Maintenance 47

TABLE OF CONTENTS (*Cont.*)

Section **Page**

7.0 MONITORING PLAN FOR THE MITIGATION AREAS 48
7.1 Construction/Installation Monitoring 48
7.2 120-Day Plant Establishment Period and Monitoring 48
7.3 Monitoring Methods 49
7.4 Performance Standards and Success Criteria 49
7.5 Qualitative Monitoring 51
7.6 Quantitative Monitoring 51
7.7 Functional Hybrid Assessment (FHA) Monitoring and Criteria 52
7.7.1 FHA Success Criteria 60

8.0 REPORTING 61
8.1 Annual Monitoring Report 61
8.2 Agency Notification at End of Monitoring Period 62
8.3 Regulatory Agency Confirmation 62

9.0 Contingency Measures 62
9.1 Adaptive Management Plan 63
9.1.1 Herbivory 64
9.1.2 Flooding 64
9.1.3 Drought 64

10.0 REFERENCES 65

LIST OF APPENDICES

Appendix A Vascular Plant Species Observed at Newhall Ranch (2002, 2003, 2004, 2005, and 2006)

LIST OF TABLES

Table 1 2006 Vegetation Community Data for Landmark Village 8

TABLE OF CONTENTS (*Cont.*)

Section **Page**

Table 2 2007 Vegetation Community Quality Data 9
Table 3 Project Impacts to Vegetation Community Types at Landmark Village 17
Table 4 Mitigation Requirements and Availability Summary 20
Table 5 Landmark Village Groundwater Depth Summary 30
Table 6 Preliminary Project Implementation Schedule 32
Table 7 Cottonwood–Willow Riparian Forest Plant Palette 38
Table 8 Mulefat Scrub Plant Palette 39
Table 9 Arrow Weed Scrub Plant Palette 40
Table 10 Southern Coast Live Oak Riparian Forest Plant Palette 41
Table 11 Big Sagebrush Scrub Plant Palette 42
Table 12 California Sagebrush Scrub Plant Palette 43
Table 13 Performance Guidelines for Creation Areas 50
Table 14 Performance Guidelines for Revegetation Areas 50
Table 15 FHA Goals for Success of Mitigation Areas 61

LIST OF FIGURES

Figure 1 Regional Map 2
Figure 2 Vicinity Map 4
Figure 3 Existing Conditions Photos 10
Figure 4 Existing Conditions Photos 12
Figure 5 Existing Conditions Photos 14
Figure 6 Vegetation Communities with Proposed Impacts 16
Figure 7 Typical Wetland Creation Cross Section 24
Figure 8 Proposed Creation/Restoration 26
Figure 9 Piezometer Locations 29

Draft Conceptual Wetlands Mitigation Plan
Landmark Village Project
Santa Clara River, Los Angeles County, California

1.0 INTRODUCTION

1.1 Background

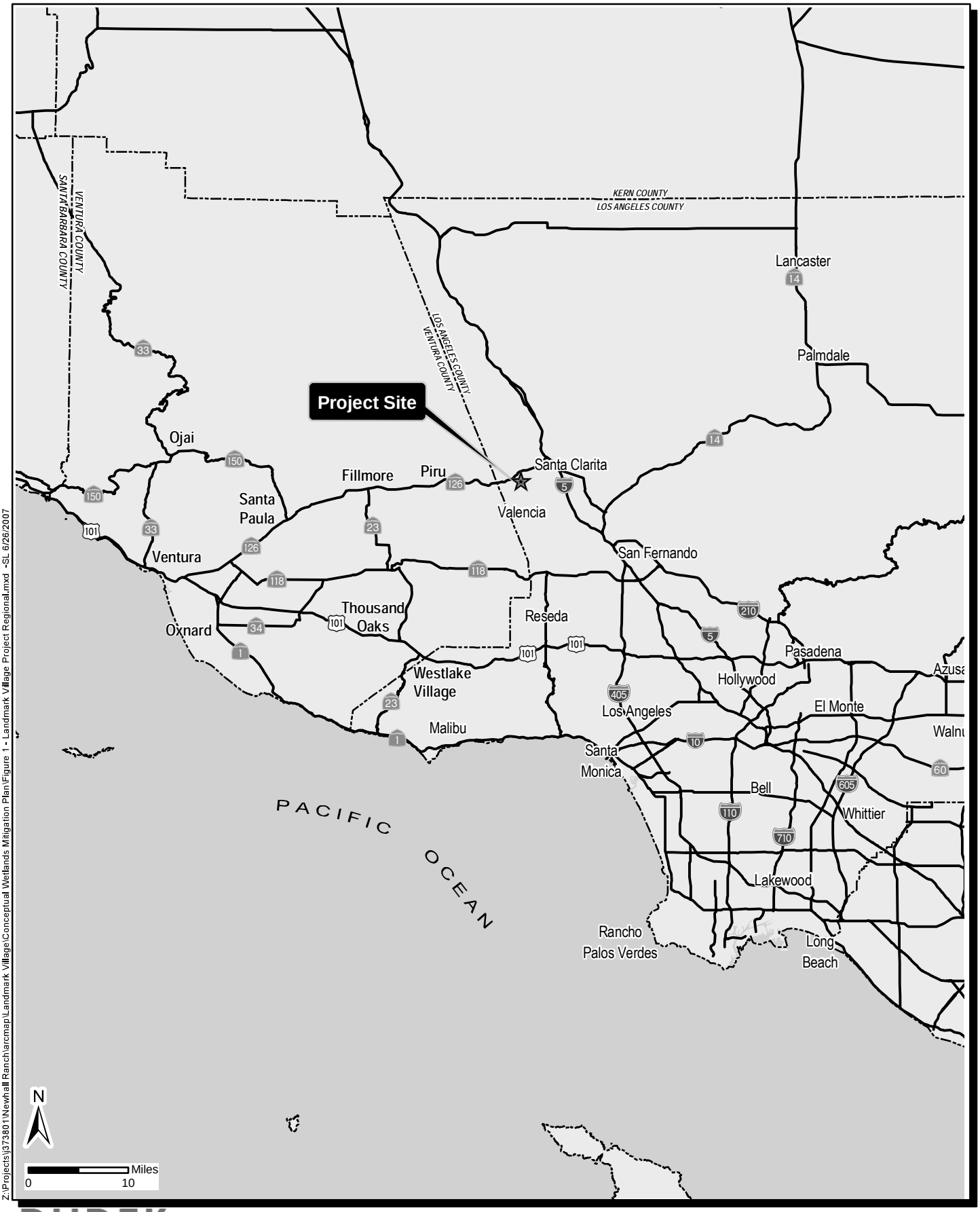
The Landmark Village project is located south of State Route 126 (SR-126) and west of Interstate 5 (I-5) in the Newhall Ranch Specific Plan area within an unincorporated part of Los Angeles County, California (*Figure 1*).

This conceptual mitigation plan addresses permanent and temporary jurisdictional wetlands impacts associated with the proposed construction of the Landmark Village project and provides a mitigation program that satisfies mitigation measures described in the certified Newhall Ranch Specific Plan area (NRSP) Environmental Impact Report (EIR) and the Landmark Village EIR (once certified). This mitigation plan will also satisfy the Resource Management and Development Plan (RMDP), California Department of Fish and Game (CDFG), Army Corps of Engineers (ACOE), and Regional Water Quality Control Board (RWQCB) permit requirements, once they have been issued.

1.2 Project Description

The project applicant proposes to develop the 292.6-acre Landmark Village tract map site. The Landmark Village project is located within the first phase of the Riverwood Village area of the approved NRSP. The proposed project consists of residential, mixed-use, and commercial development, along with roads, an elementary school site, a community park, recreational centers, open space, trails, and off-site grading/improvements, including the Long Canyon Road Bridge, bank stabilization, drainage improvements, and the establishment of potable and reclaimed water tanks, utility corridor, borrow site, and related haul routes. These project components, combined, equal approximately 1,000 acres.

The majority of jurisdictional impacts will result from the installation of buried bank stabilization and the Long Canyon Road Bridge. The buried bank protection project will use soil cement to provide bank protection/stabilization along a segment of the Santa Clara River to allow for development of the adjacent land. The majority of the tract map site is currently used for agriculture. The remaining portion of the tract map site is composed of various disturbed lands, southern cottonwood–willow riparian forest, arrow weed scrub, mulefat scrub, and river wash. The remaining project components occur in both developed and undeveloped areas (agricultural fields, riverbed and tributary drainages, existing highway and local roadways, and undisturbed native habitats).



Z:\Projects\j373801\Newhall Ranch\arcmap\Landmark Village\Conceptual Wetlands Mitigation Plan\Figure 1 - Landmark Village Project Regional.mxd -SL 6/26/2007

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Landmark Village Conceptual Wetlands Mitigation Plan

Regional Map

FIGURE
1

1.3 Project Location

The Landmark Village project is located immediately downstream of the confluence of Castaic Creek and the Santa Clara River southwest of the intersection between SR-126 and Commerce Center Drive in the City of Santa Clarita, Los Angeles County, California. SR-126 runs generally along the northern boundary of the project site (*Figure 2*). The Santa Clara River forms the southern boundary of the tract map site. Other project components are located south of the tract map site, within and south of the river (borrow site, haul routes, bank protection, and bridge construction); east of the tract map site (bank protection); and along SR-126 and Chiquito Canyon Road, east, west, and north of the tract map site (drainage channel improvements, potable and reclaimed water tanks, and utility corridor).

1.4 Responsible Parties

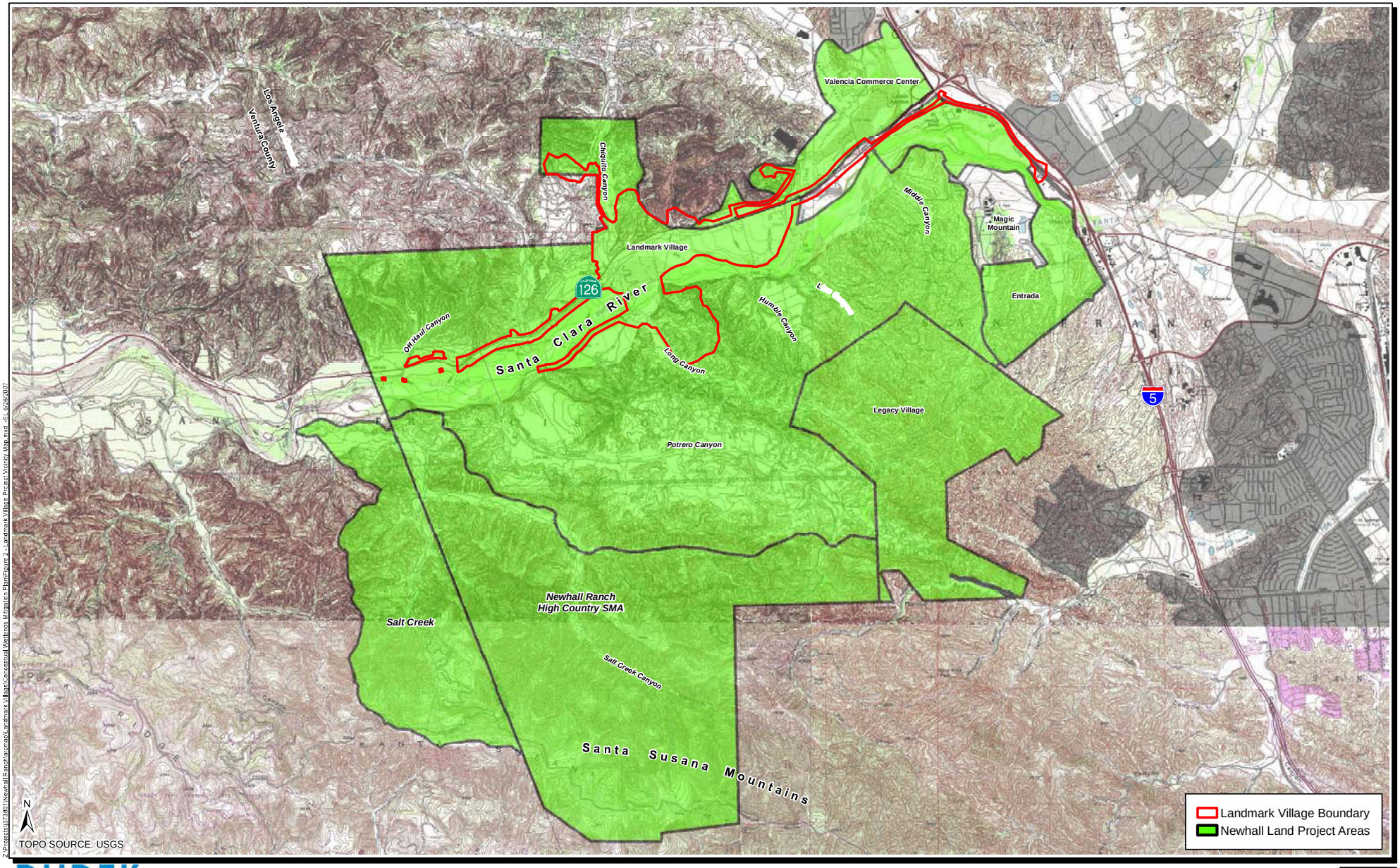
1.4.1 Applicant Responsibilities

The Newhall Land and Farming Company (Newhall Land) is the applicant for the project. The contact person for Newhall Land is Glenn Adamick. Newhall Land is financially responsible for all costs associated with the implementation, monitoring, maintenance, and long-term management and protection of the mitigation area, as defined in this document and under applicable sections of the NRSP area EIR, Landmark Village EIR, and master CDFG, ACOE, and RWQCB permits.

The mitigation project area shall be accessible to CDFG, ACOE, RWQCB, the U.S. Fish and Wildlife Service (USFWS) and the County of Los Angeles throughout project review and installation and during the 5-year maintenance and monitoring period.

1.4.2 Project Biologist Responsibilities

A qualified project biologist(s) will be selected to implement mitigation installation monitoring and long-term maintenance monitoring of the mitigation area. The project biologist will possess specific knowledge and project-level experience with wetlands restoration and enhancement projects. The project biologist must demonstrate an understanding of local plant community ecology, habitat restoration, and weed removal and have expertise in plant and wildlife identification. The project biologist will possess at least 3 years of wetlands restoration experience in Southern California.



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Landmark Village Conceptual Wetlands Mitigation Plan

Vicinity Map

FIGURE
2

The project biologist, in coordination with Newhall Land and the various permitting agencies, will review applicable contract documents to gain a complete understanding of the project. The project biologist shall be responsible for monitoring compliance with environmental permits during mitigation construction (fine grading, irrigation installation, and planting), and long-term biological monitoring and reporting on the mitigation area.

During development construction, the project biologist will monitor approved development impact limits, site clearing activities, and salvaging of topsoil to be used in restoration. The project biologist shall ensure that Newhall Land follows the guidelines of this plan, the NRSP EIR, the Landmark Village EIR, resource agency permits, and construction and landscape documents as they apply to mitigation. Technical consultation shall be provided for interpretation of plans, field monitoring of project installation, and biological monitoring and reporting throughout the 5-year long-term monitoring period.

The project biologist will inform project personnel prior to implementation of this conceptual plan of on-site construction restrictions. The project biologist will inform project personnel of the presence or potential presence of sensitive species and sensitive vegetation communities within or adjacent to the restoration/creation/enhancement project areas, as well as known biological-related dangers on site (e.g., rattlesnakes, bee hives, stinging nettle). Information about federal, state, and local laws relating to these biological resources will be discussed as part of the personnel education. Access and staging areas outside of environmentally sensitive areas will be established.

The project biologist will periodically monitor mitigation project activities to confirm compliance with the above requirements. During installation and maintenance, the project biologist will have the authority to stop work in situations where biological resources not permitted to be impacted are in imminent danger of impacts from installation or maintenance work. The project biologist shall document in an observation report construction activities relating to the mitigation plan and any project deficiencies and shall prepare annual reports and summary progress reports as described in *Section 8.1*.

1.4.3 Restoration Contractor Responsibilities

Revegetation installation and long-term maintenance shall be provided by a contractor who possesses a valid California C-27 Landscape Contractor's license, who has previous experience with habitat revegetation in the region, and who can demonstrate at least three successful similar wetland enhancement projects of significant size in vegetation community types in Southern

California. The restoration contractor hired for installation may be separate from a restoration contractor hired for long-term maintenance.

During the implementation phase, the restoration contractor will be responsible for project installation, including initial weed treatment and removal, irrigation installation, seeding, planting, mulch installation, erosion control, any necessary grading, and other tasks as directed by the project biologist as described in this document, the construction documents, the NRSP EIR, the Landmark Village EIR, and all resource agency permits. During the long-term monitoring phase, the restoration contractor will be responsible for maintenance of the irrigation system, weed control, erosion control, trash removal, replanting, and other tasks as directed by the project biologist and as described in all construction documents. The restoration contractor's responsibility will continue until success criteria have been met, pursuant to resource agency permits and this mitigation plan.

1.4.4 Construction Documents

Following approval of this conceptual plan, construction drawings and specifications will be prepared for construction purposes. Construction drawings and specifications will conform to all aspects of this conceptual plan, the NRSP EIR, the Landmark Village EIR, and permit conditions required by the resource agencies. Construction documents will incorporate the most current site condition information available. Any significant changes to site conditions and final mitigation plans may be subject to review and comment by permitting resource agencies. The plan package will include a site plan showing proposed work areas and final site facilities, construction details, irrigation and planting plans, and any additional grading. Construction documents shall provide location and details of any resource-agency-required signage or access restrictions.

1.4.5 As-Built Conditions

As-built plans for this mitigation project will only be required if the installation project substantially deviates from this plan and/or the permit conditions. If necessary, as-built plans will reflect changes to the configuration of vegetation community areas and site elevations that may affect project success.

2.0 EXISTING CONDITIONS

2.1 Field Reconnaissance

On March 14, 2007, Dudek habitat restoration specialists Stuart Fraser and Adam Causey established point-intercept transects to collect data for evaluation of existing native and non-native

vegetation cover values in the native vegetation communities to be impacted by this tract map development and associated borrow site, bank protection construction, bridge construction, haul routes, drainage channel improvements, potable and reclaimed water tanks, and utility corridor. Data was collected from two 25-meter transects established in existing mulefat scrub, arrow weed scrub, southern cottonwood-willow riparian forest, and river wash vegetation communities on site. Vegetation intercepting the transect line at 0.5-meter intervals was recorded. Data was collected in three different vertical strata, including herbaceous layer (0.0 meter – 1.0 meter), shrub layer (1.0 meter – 3.0 meters), and canopy layer (3.0 meters and higher). This data was utilized to establish success criteria for replacement vegetation communities as required by the NRSP EIR and the Landmark Village EIR (*Section 7.4*).

A list of plant species observed within the NRSP from 2002-2006 is presented in *Appendix A*.

2.2 Existing Plant Communities and Land Covers

A total of 23 plant communities and associated alliances and 2 existing land use areas (active agriculture and developed areas) was identified on the project site during the field investigations based on species composition and general physiognomy using CDFG classification. Sixteen of these plant communities, including California annual grassland (49.95 acres), southern cottonwood–willow riparian forest (26.66 acres), coast live oak woodland (1.81 acres), California sagebrush scrub (84.57 acres), undifferentiated chaparral scrubs (48.64 acres), arrow weed scrub (6.93 acres), mulefat scrub (10.74 acres), southern willow scrub (3.70 acres), big sagebrush scrub-California buckwheat (0.54 acres), California sagebrush scrub–*Artemisia* (0.42 acres), California sagebrush scrub–black sage (5.58 acres), California sagebrush scrub–California buckwheat (40.93 acres), California sagebrush scrub–purple sage (14.45 acres), chamise chaparral (2.84 acres), southern coast live oak riparian forest (0.64 acre), and big sagebrush scrub (11.59 acres) correspond with the "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003). Included (where applicable) are the codes corresponding to the "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CDFG 2003). The remaining six described communities—disturbed land (239.93 acres), herbaceous wetlands (2.35 acres), California sagebrush scrub–undifferentiated chaparral (62.05), open channel–developed (0.02 acre), river wash (14.07 acres), and alluvial scrub (0.47 acre) —do not fit a defined plant community classification and, therefore, are defined by their dominant plant species. The plant communities and the land uses occurring on the project site are discussed below. These vegetation communities and land covers are described below, and their acreages are presented in *Table 1*. Qualitative data and a brief structural description for each of the vegetation community types to be mitigated are presented in *Table 2*.

TABLE 1
2006 Vegetation Community Data for Landmark Village

Vegetation Communities	Existing Acreage
Agriculture	404.92
Alluvial scrub	0.47
Arrow weed scrub	6.93
Big sagebrush scrub	11.59
Big sagebrush scrub – California buckwheat	0.54
California annual grassland	49.95
California sagebrush scrub	84.57
California sagebrush scrub–*Artemisia*	0.42
California sagebrush scrub–black sage	5.58
California sagebrush scrub–California buckwheat	40.93
California sagebrush scrub–purple sage	14.45
California sagebrush scrub–undifferentiated chaparral	62.05
Undifferentiated chaparral	48.64
Chamise chaparral	2.84
Coast live oak woodland	1.81
Developed areas	9.52
Disturbed land	239.93
Herbaceous wetlands	2.35
Mulefat scrub	10.74
Open channel–developed	0.02
River wash	14.07
Southern coast live oak riparian forest	0.64
Southern cottonwood–willow riparian forest	26.66
Southern willow scrub	3.70
Total	**1043.31**

2.2.1 Agriculture

The majority of the development site is currently used for agricultural purposes. At the time of the 2006 vegetation community surveys, the agricultural fields on the tract map site were fallow and contained non-native grasses and other ruderal vegetation. The agricultural fields are disked regularly. The 19.84 acres of agriculture not developed by the proposed Landmark Village project would be temporarily disturbed by bank stabilization and/or haul roads, but would be restored to native vegetation following completion of construction.

TABLE 2
2007 Vegetation Community Quality Data

Vegetation Community Type	% Native Species	% Non-Native Species	% Absolute Native Cover	Structural Diversity
Southern cottonwood–willow riparian forest	70%	30%	65%	Well-developed cottonwood and willow canopy with understory dominated by exotic grasses.
Arrow weed scrub	83%	17%	51%	Thickets of dense arrow weed cover in shrub layer. Groundcover consists of mainly native scrub vegetation and weedy exotic annuals.
Mulefat scrub	63%	37%	29%	Thickets of dense mulefat cover in shrub layer, but groundcover is disturbed and mainly consists of weedy exotic annuals.
River wash	100%	0%	2%	Dominated by bare ground due to scouring. Diverse vegetation in river wash and along banks, including native and exotic plants.

2.2.2 California Annual Grassland

California annual grassland is a non-native grassland vegetation community that typically refers to areas with a sparse to dense cover of annual grasses, often associated with showy-flowered annual forbs (Holland 1986). These areas typically occur where the native grassland vegetation has been disturbed frequently or intensively by grazing, fire, agriculture, or other practices, resulting in the removal of the native seed source from the soil. Native grasses are often incapable of recovering, allowing weedy, introduced annual grasses and forbs to colonize. Dominant species include slender wild oat (*Avena barbata*), bromes (*Bromus diandrus*, *B. madritensis*, *B. hordeaceus*), and forbs such as mustards (*Brassica* and *Sisymbrium* spp.), filaree (*Erodium* spp.), and Russian thistle (*Salsola tragus*).

Within the project footprint, non-native grassland vegetation occurs on the flat floodplain terraces immediately adjacent to the Santa Clara River and supports at least 50% cover of annual non-native grasses, with the remaining cover dominated by non-native annual forbs (*Figure 3*). Dominant species include slender wild oat, ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), red brome (*Bromus madritensis*), and mustards.

Figure 3 Existing Conditions Photos

Photo 1: California annual grassland

Photo 2: Southern cottonwood–willow riparian forest

2.2.3 Southern Cottonwood–Willow Riparian Forest

According to Holland (1986), southern cottonwood–willow riparian forest is a tall, open, broad-leaved winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) in the canopy and shrubby willow species, including narrow-leaved willow (*Salix exigua*) and arroyo willow (*Salix lasiolepis*), in the understory.

Within the project footprint, this vegetation community is dominated by a mature cottonwood and arroyo willow canopy generally greater than 20 feet high and covering over 70% of the area (*Figure 3*). The understory consists of shrubs, including golden currant (*Ribes aureum*), mulefat (*Baccharis salicifolia*), arrow weed (*Pluchea sericea*), mugwort (*Artemisia douglasiana*), hoary nettle (*Urtica dioica* ssp. *holosericea*), Mexican elderberry (*Sambucus mexicanus*), and herbaceous forbs and non-native grasses, including slender wild oat. The shrub layer (the vertical stratum between 3 and 12 feet in height) averages approximately 5% native cover; the only notable non-native cover present was the monotypic stands of giant reed (*Arundo donax*). Non-native grasses, like slender wild oat, dominate the herbaceous understory (the vertical stratum beneath 3 feet), making up approximately 73% of the ground cover. Native species make up less than 20% of the herbaceous cover.

2.2.4 Arrow Weed Scrub

This plant community occurs in two locations in the northeast portion of the tract map site, located to the south of SR-126. This community is characterized by a dense growth of arrow weed in the shrub layer. Arrow weed makes up about 20% of the vegetation community. The ground-cover layer is composed of mainly small native brush and weedy exotic annuals. California sagebrush (*Artemisia californica*) and mustard are the most common plants within the ground-cover layer. Less frequently but commonly present are Mexican elderberry, black sage (*Salvia mellifera*), and annual grasses. All exotic species found in arrow weed scrub were found in the ground-cover layer. About 33% of the area within this community is bare of any vegetation. Based on quantitative data collection and cover value analysis, arrow weed scrub supports a total relative cover of 68%, which includes 51% absolute native cover and 24% absolute non-native cover (*Figure 4*).

Figure 4 Existing Conditions Photos

Photo 3: Arrow weed scrub

Photo 4: Mulefat scrub

2.2.5 Mulefat Scrub

Within the project footprint, this vegetation community occurs on the western portion of the tract map site, adjacent to the river floodplain, near the water tank area, as well as within the utility corridor in locations within the floodplains of Castaic Creek and the Santa Clara River. The dominant species in this community are mulefat and arrow weed shrubs. The mulefat and arrow weed grow in dense groups, but over 50% of the ground in this community is bare.

Non-native plants, including tree tobacco (*Nicotiana glauca*), tamarisk (*Tamarix* sp.), and giant reed also are common. The understory is sparse or absent, but when present can include such species as phacelia (*Phacelia* sp.), tocalote (*Centaurea melitensis*), telegraph weed (*Heterotheca grandiflora*), mustard, and annual grasses. Nearly 80% of exotic plants in the understory are exotic grass species. Based on quantitative data collection and cover value analysis, mulefat scrub supports a relative cover of only 53%. This includes 28.5% native absolute canopy cover, and 24.5% non-native absolute canopy cover (*Figure 4*).

2.2.6 River Wash

The stretch of the Santa Clara River occurring within and bordering the project location is sparsely vegetated and subject to scouring by seasonal storm flows (*Figure 5*). Soils are sandy river wash and gravel, and in places form sand bars and low terraces within the channels. Shrub species occurring in and adjacent to the channel include mulefat, sandbar willow, tamarisk, scale-broom, sandwash groundsel (*Senecio flaccidus* var. *douglasii*), big saltbush (*Atriplex lentiformis* ssp. *lentiformis*), and Great Basin sagebrush (*Artemisia tridentata*). Smaller species growing in the riverbed include white sweet clover (*Melilotus albus*), buckwheat (*Eriogonum baileyi*), cocklebur (*Xanthium strumarium*), California croton (*Croton californicus*), California evening primrose (*Oenothera californica* ssp. *californica*), Mediterranean schismus (*Schismus barbata*), foxtail chess, and annual bur-sage (*Ambrosia acanthicarpa*). Despite the variety of plant species found in river wash, quantitative data collection and cover analysis show the relative cover of river wash to be 2%.

2.2.7 Developed Land

Developed land typically refers to areas supporting built structures such as homes, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Such structures typically support little to no natural vegetation growth and are not considered sensitive.

These areas primarily include road corridors, parking lots, and commercial areas along the eastern utility corridor and various impermeable surfaces throughout the project site.

Figure 5 Existing Conditions Photos

Photo 5: River Wash

2.2.8 Disturbed Land

Disturbed areas are mostly devoid of vegetation and are often accompanied by trash and litter. These areas mostly include portions of the site that are located immediately adjacent to SR-126 and Chiquito Canyon Road.

2.3 Soils

Soils on site are Quaternary older alluvium (Qoa) and Quaternary alluvium (Qal). Soils on the eastern portion at the depth of intended grading (approximately 10–15 feet) tend to be composed of mainly sand. The soils range from being poorly-graded sand containing gravel to well-graded sand with silt. There are also areas that are mainly composed of a mixture of sand and silt. The soil varies between moist and wet. The soils also tend to be dense. The groundwater is found about 25 feet deep.

The soil on the western portion of the site at the depth of intended grading (approximately 6 to 8 feet) is composed of well-graded sand with gravel. The soil is loose and wet. The groundwater is found about 10 feet under the surface.

See *Section 4.5* for more information about groundwater depths.

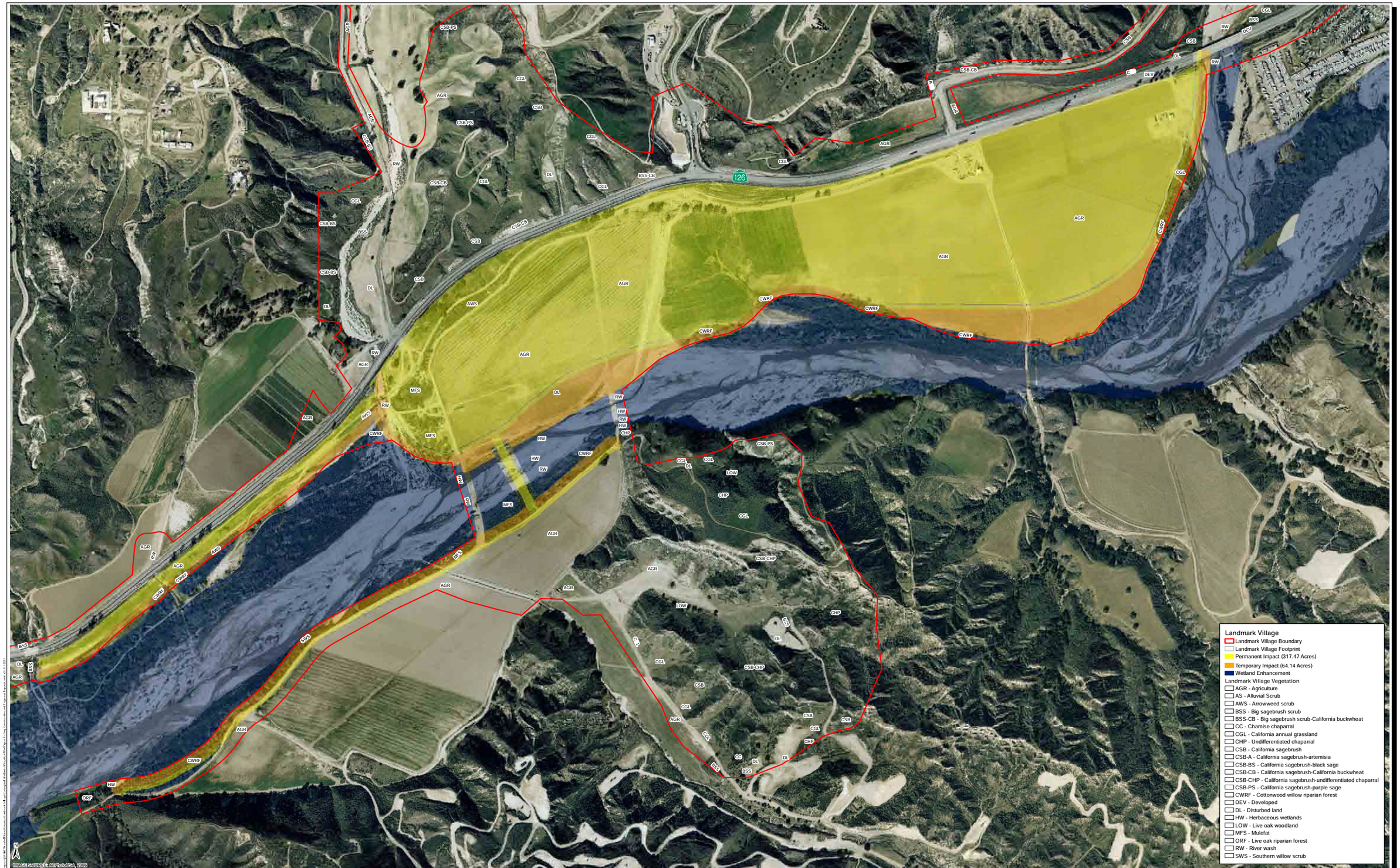
3.0 PROJECT IMPACTS

3.1 Impacts to Vegetation Communities

Implementation of the proposed project will result in permanent impacts and temporary impacts as stated in the Landmark Village EIR. *Table 3* provides acreages of permanent and temporary impacts to all vegetation community types. *Figure 6* shows the locations of vegetation communities and the impacts to those vegetation communities. The permanent impacts amount to 367.19 acres of agriculture, 48.17 acres of California annual grassland, 1.76 acres of coast live oak woodland, 46.63 acres of undifferentiated chaparral, 2.84 acres of chamise chaparral, 7.12 acres of mulefat scrub, 8.05 acres of southern cottonwood–willow riparian forest, 84.57 acres of California sagebrush scrub, 0.15 acre of California sagebrush scrub–*Artemisia*, 5.50 acres of California sagebrush scrub–black sage, 40.93 acres of California sagebrush scrub–California buckwheat, 13.97 acres of California sagebrush scrub–purple sage, 60.66 acres of California sagebrush scrub-undifferentiated chaparral, 0.04 acre of southern willow scrub, 6.26 acres of river wash, 0.47 acre of alluvial scrub, 9.13 acres of big sagebrush scrub, 0.35 acre of southern coast live oak riparian forest, 5.49 acres of arrow weed scrub, 0.11 acre of California sagebrush scrub, 0.38 acre of herbaceous wetlands, 0.02 acre of open channel–developed, 228.01 acres of disturbed land, and 0.54 acre of big sagebrush scrub-California buckwheat.

3.2 Existing Functions and Values of Vegetation Communities to be Impacted

Vegetation communities impacted by project construction range from disturbed vegetation communities dominated by weedy herbaceous vegetation, containing vegetation with low existing functions and values, to vegetation communities exhibiting high existing functions and values that include mature native vegetation with developed vertical structure and diversity of plant species. Areas with significant functions and values include native vegetation communities providing nesting, feeding, and breeding opportunities for various aquatic, terrestrial, and avian animals. Mature vegetation in these areas provides energy dissipation during storm flow events, nutrient cycling, uptake of elements and compounds, entrapment of sediments, and hydrologic variation in flow patterns.



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Landmark Village Conceptual Wetlands Mitigation Plan
Vegetation Communities with Proposed Impacts

FIGURE
6

TABLE 3
Project Impacts to Vegetation Community Types at Landmark Village

Vegetation Community Type	Impacts (Acres)		Total
	Permanent	Temporary	
Agriculture	367.19	19.84	387.03
Alluvial scrub	0.47	—	0.47
Arrow weed scrub	5.49	0.63	6.12
Big sagebrush scrub	9.13	2.46	11.59
Big sagebrush scrub – California buckwheat	0.54	—	0.54
California annual grassland	48.17	1.78	49.94
California sagebrush scrub	84.57	—	84.46
California sagebrush scrub–*Artemisia*	0.15	—	0.15
California sagebrush scrub–black sage	5.50	0.08	5.58
California sagebrush scrub–California buckwheat	40.93	—	40.93
California sagebrush scrub–purple sage	13.97	—	13.97
California sagebrush scrub–undifferentiated chaparral	60.66	—	60.66
Undifferentiated chaparral	46.63	—	46.63
Chamise chaparral	2.84	—	2.84
Coast live oak woodland	1.76	—	1.76
Developed areas	9.52	—	9.52
Disturbed land	228.01	7.98	235.99
Herbaceous wetlands	0.38	0.55	0.93
Mulefat scrub	7.12	2.13	9.25
Open channel–developed	0.02	—	0.02
River wash	6.26	3.70	9.96
Southern coast live oak riparian forest	0.35	0.28	0.63
Southern cottonwood–willow riparian forest	8.05	12.95	21.00
Southern willow scrub	0.04	3.64	3.69
Total	**947.74**	**56.04**	**1003.78**

3.2.1 Southern Cottonwood–Willow Riparian Forest

The southern cottonwood–willow riparian forest to be impacted has a well-developed canopy layer composed of cottonwood trees. The community contains willow saplings and developed understory. The understory is dominated by exotic annual grasses, but native vegetation occurs, including mugwort, California buckwheat, golden currant, and manroot (*Marah macrocarpus*). In all strata, understory through canopy, native vegetation covers almost 70% of the vegetation community. The understory is dominated by exotic invasive species covering over 80% of the area. The most common exotic species are weedy annual grasses and giant reed.

The southern cottonwood–willow riparian forest is adjacent to the Santa Clara River, which contains year-round surface flow and occasionally floods. The functions of the southern cottonwood–willow riparian forest include improving the Santa Clara River system's water-holding capacity, filtration ability, and soil stability. The southern cottonwood–willow riparian forest provides breeding, feeding, and nesting habitat for avian, aquatic, and terrestrial animal species. The site also receives runoff from the nearby agricultural fields and the groundwater is no more than 30 feet deep (Allen E. Seward 2007). The channel's topographical complexity comprises both micro- and macro-features, including meanders, bars, secondary channels, terraces, pits, ponds, and hummocks, providing niche habitats for plant and wildlife species.

3.3.2 Mulefat Scrub

The mulefat scrub vegetation community to be impacted contains patchy riparian vegetation consisting mainly of mulefat. The understory is poorly developed and often bare. The understory vegetation is mostly composed of exotic species. There are few riparian trees growing above the shrub layer. Other native species occur, but the variety and quantity are poor. The site is only about 25%-covered with exotic species, and about 50% of the community is bare. This site contains a total vegetative cover of about 50%.

The mulefat vegetation community is adjacent to a stream channel, which flows periodically and with varying intensity. The community is also adjacent to agricultural fields that provide intermittent runoff, and likely has access to groundwater. The groundwater near this area is approximately 10 feet below surface level (Allen E. Seward 2007). There are no micro- or macro-topographic features; instead, the area is mostly flat. Mulefat scrub provides some breeding, feeding, and nesting habitat for avian, aquatic, and terrestrial animal species.

3.3.3 Arrow Weed Scrub

The arrow weed scrub community is dominated by shrubs and understory species. There is no vegetation reaching into the canopy layer. The site is approximately 30% bare of any vegetation. Exotic invasive species, mainly mustard, but also including annual grasses, cover approximately 25% of the community. The arrow weed scrub is dominated by a small number of species, mainly arrow weed, California sagebrush, and mustard. Arrow weed scrub provides some breeding, feeding, and nesting habitat for avian, aquatic, and terrestrial animal species.

3.3.4 River Wash

The river wash community is predominately flat and homogenous. There are some micro-topographic features including meanders, bars, terraces, pits, ponds, and hummocks. The area

contains only 2% vegetative cover. The vegetation surrounding the river wash is diverse, containing both native and exotic plant vegetation. The river wash provides area for river movement and meander, space for flood waters, and some habitat for avian, aquatic and terrestrial animal species.

4.0 MITIGATION PROGRAM

4.1 Mitigation Requirements

This plan addresses the required mitigation for permanent and temporary impacts incurred by the implementation of the Landmark Village project. Mitigation requirements will be achieved through the creation, restoration, and enhancement of native vegetation communities on site and immediately off site in the existing Santa Clara River channel. Wetland creation areas represent an expansion of the jurisdictional area of state and federal wetlands that will be used to mitigate for permanent impacts to native vegetation communities. Restoration areas define the extent of areas temporarily impacted by project implementation that will be re-established as native wetland vegetation communities. Enhancement areas are located within existing jurisdictional wetlands and involve enhancement of the functions and values of the existing vegetation community. In some cases, enhancement involves the removal of non-native species, such as giant reed (*Arundo donax*), and the establishment of appropriate wetland species within the previous footprint of the removed non-native vegetation. One of the enhancement areas will convert an area of predominantly non-native vegetation (Disturbed Land) to a predominately native wetland vegetation community—in this case, southern coast live oak riparian forest. All vegetation mitigation is subject to the mitigation requirements established by the permitting agencies. The permanent and temporary impacts, the total areas required for mitigation, and mitigation opportunities available on site are provided in *Table 4*.

TABLE 4
Mitigation Requirements and Availability Summary

Vegetation Type (Permanent Impact Mitigation Ratio)	Permanent Wetland Impacts (Acres)	Temporary Wetland Impacts (Acres)	Total Mitigation Required (Acres)	Creation (Acres)	Restoration (Acres)	Enhancement (Acres)	Total Mitigation Provided (Acres)
Arrow weed scrub (2:1)	5.49	0.62	11.6	5.26	5.88		11.14
Mulefat scrub (2:1)	7.12	2.12	16.36	17.79	1.38		19.17
River wash (1:1)	6.26	3.72	9.98	2.39	3.31		5.7
Southern cottonwood–willow riparian forest (3:1)	8.05	12.95	37.1	22.36	12.79	4.58	39.73
Southern coast live oak riparian forest (3:1)	0.35	0.28	1.33	2.25			2.25
Southern willow scrub (3:1)	0.04	3.64	3.76	1.14	2.56		3.7
Herbaceous wetlands (1:1)	0.38	0.55	0.93		0.17		0.17
Total	**27.69**	**23.88**	**81.06**	**51.19**	**26.09**	**4.58**	**81.86**

4.1.1 Permanent Impact Mitigation

Permanent impacts will be mitigated through the on-site creation of like-kind wetland vegetation types at a 1:1 ratio. Additional wetlands will be created or additional wetland enhancement will be conducted to mitigate permanent wetlands impacts to the full mitigation ratio based on vegetation community type (*Table 4*) and to mitigate for vegetation types that cannot completely be created/restored on site. For example, impacts to southern cottonwood–willow riparian forest will be mitigated through 1:1 on-site creation and a combination of wetland creation, restoration, and enhancement along the Santa Clara River for a total replacement ratio of 3:1. Permanent impacts to river wash will be mitigated at a 1:1 ratio through on-site restoration of the Santa Clara River or Castaic Creek or through wetland enhancement. Any deficits in either permanent or temporary mitigation acreages will be mitigated by excess mitigation completed for the other. Should both mitigation types run a deficit or if the excess is not enough to make up the other's deficiency, the remainder will be mitigated through enhancement.

4.1.2 Temporary Impact Mitigation

Vegetation communities temporarily impacted by the proposed project will be restored through a passive restoration approach. Native vegetation within temporary construction areas shall be mulched and set aside. Large trunks of removed trees may be utilized on site to provide habitat for invertebrates, reptiles, and small mammals or may be anchored within the project site for erosion control. If the timing of the mulching and application is appropriate (i.e., not too long), the native mulch will be spread over the temporary impact areas in order to facilitate revegetation. If the period of mulch storage exceeds approximately 1 month, then when the temporary impact area is ready for a native mulch application, fresh native mulch will be acquired from Newhall Land's mulching facility nearby and applied to the temporary impact areas to provide seed propagules and native biomass.

After the completion of Year 1, the project biologist will evaluate the progress of the passive restoration approach in the temporary impact areas to determine if natural recruitment has been sufficient for the site to eventually reach performance goals. In the event that native plant recruitment is determined by the project biologist to not be adequate for successful habitat establishment, Newhall Land shall revegetate the temporary construction areas 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.

Areas temporarily disturbed by construction activities shall also be weeded annually, as needed, for up to 5 years following construction. Weeds shall be removed by hand, an approved herbicide application, and/or by mechanical equipment. These areas shall be annually monitored for 5 years after construction to document vegetation community establishment.

Annual monitoring reports on the status of the natural recovery of temporarily disturbed areas shall be submitted to the ACOE and CDFG by April 1 of each year as part of the Annual Mitigation Status Report and Mitigation Accounting Form.

4.1.3 Cumulative Impacts and Mitigation Area Available

Project implementation will result in permanent and temporary impacts to 51.57 acres of wetlands vegetation that require 81.06 acres of mitigation through wetlands creation, restoration of temporary impact areas, and enhancement of existing degraded wetlands. There are 81.86 acres available for wetlands mitigation on site. There is a total of 0.8 acres of wetlands mitigation available for Newhall Land to use on other projects.

4.1.4 Specific Project Mitigation Requirements

The County of Los Angeles adopted mitigation measures for potential significant biological impacts as part of the NRSP EIR. The mitigation measures that apply to this report are found in the certified NRSP EIR and the Landmark Village EIR. The project applicant has committed to implementing these mitigation measures. The mitigation measures that relate specifically to the NRSP EIR and Landmark Village project are designated “SP 4.6-1” and “LV 4.4-1” respectively.

4.2 Goals of the Mitigation Program

Goals of this creation/revegetation project are to:

- Comply with the requirements mandated in resource agency permits
- Create/replace upland and riparian vegetation communities suitable for nesting, forage, and breeding by native animal species
- Create/replace vegetation communities that are consistent with adjacent existing riparian vegetation communities
- Create vegetation communities that are compatible with the fluvial morphology and hydrology of the stream channel corridor
- Create vegetation communities with similar or higher functions and values than those vegetation communities permanently impacted by the project
- Create vegetation communities that are self-sustaining and functional beyond the maintenance and monitoring period.

4.3 Design Approach

Wetland mitigation areas are required to replace the functions and values of the vegetation communities permanently and temporarily impacted. Replacement vegetation communities shall have similar dominant trees, understory shrubs, and herbs, and shall be designed to replicate the density and structure of the affected vegetation communities once the replacement vegetation communities have reached mature status.

Vegetation communities to be restored on site include a mosaic of mulefat scrub, arrow weed scrub, river wash, and southern cottonwood–willow riparian forest. The target functions and values of the created and restored wetland areas include increasing the overall vegetation quality by

removing and controlling any invasive exotic and weed species present on site and replacing exotic species with appropriate native species and vegetation communities from container plants and seed. The improvement to vegetative cover will increase wildlife habitat value, which will provide better nesting, cover, and foraging opportunities for avian, aquatic, and terrestrial animal species. Also, the areas will function to promote nutrient cycling, nutrient and compound uptake, and organic carbon export, will be hydraulically compatible with the adjacent stream system, and will reduce erosion and increase slope stability during flood inundation.

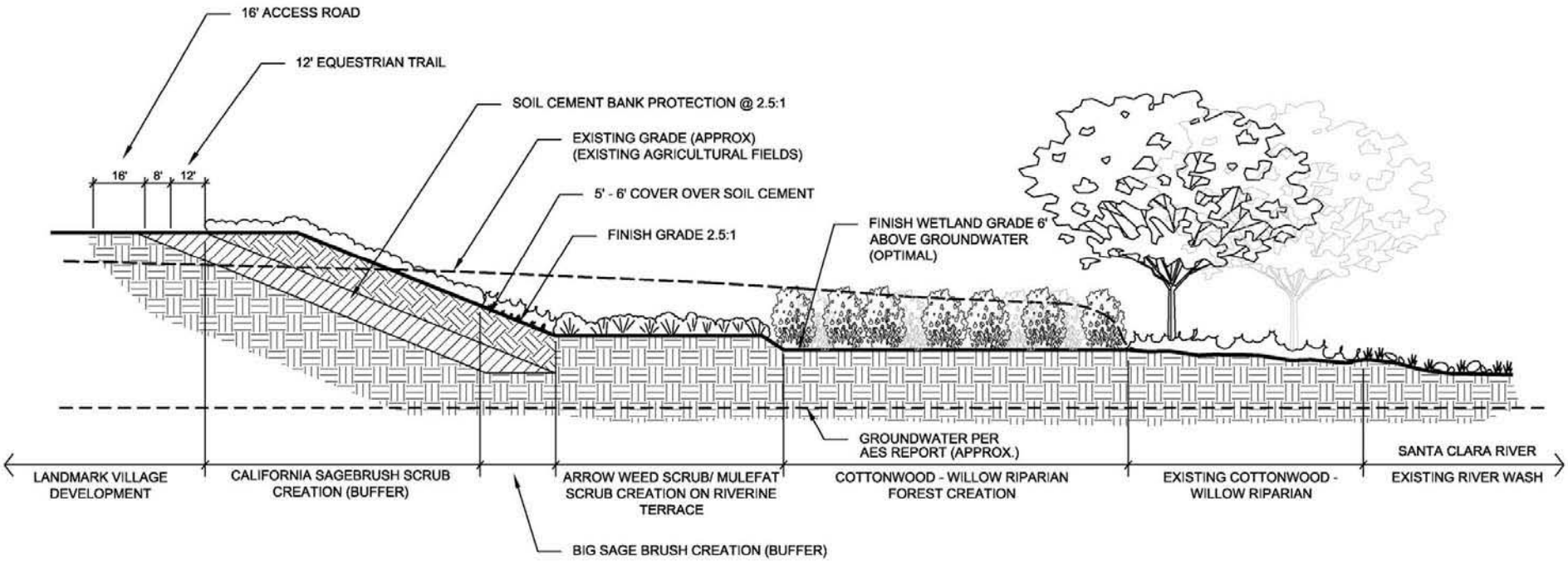
Once mitigated and restored, it is probable that this site will attract state- and/or federally-listed species, including the least Bell's vireo (*Vireo bellii pusillus*) and southern willow flycatcher (*Empidonax traillii*), both of which are known to occur in the project vicinity along the Santa Clara River. The vegetative communities on site are ultimately expected to expand the adjacent riparian vegetation and become a functioning part of the existing riparian system of the Santa Clara River.

Water quality will be improved by significantly reducing the amount of water-borne weed propagules (e.g., giant reed rhizomes, roots, and canes, or herbaceous weed seed) that currently flow downstream each winter. Deep-rooted native willow trees (*Salix* spp.), mulefat, and Fremont cottonwood are not as susceptible to uprooting during high flow events and will stabilize the soil better than the existing exotic species. Native riparian plants help to reduce turbidity and limit erosion during high flow events. The native wetlands vegetation that replaces the non-native cover generally functions better at stabilizing soil and stream bank edges and increasing nutrient transformation. The site hydrology is expected to improve after the removal of the water-consumptive exotic species, which will increase the amount of groundwater locally available to native trees, shrubs, and herbs.

4.4 Wetlands Creation Design Concept

4.4.1 Permanent and Temporary Wetland Impact Mitigation Areas

Permanent wetlands impacts at Landmark Village will be mitigated through wetlands creation and enhancement. Wetlands creation will involve grading agricultural lands to elevations that are consistent with the flows of the Santa Clara River. Grade elevations in the eastern portion of the mitigation area will be lowered by 10 to 12 feet to create the appropriate hydraulic connections to the river. On the western portion of the mitigation area, the grades will be lowered by 6 to 8 feet (*Figure 7*). In all cases, grading will be designed to achieve flow gradients consistent with the existing river floodplain. The proposed mitigation elevations also are consistent with existing groundwater levels within the project site as discussed in *Section 4.5*.



Landmark Village Project

Typical Wetland Creation Cross Section

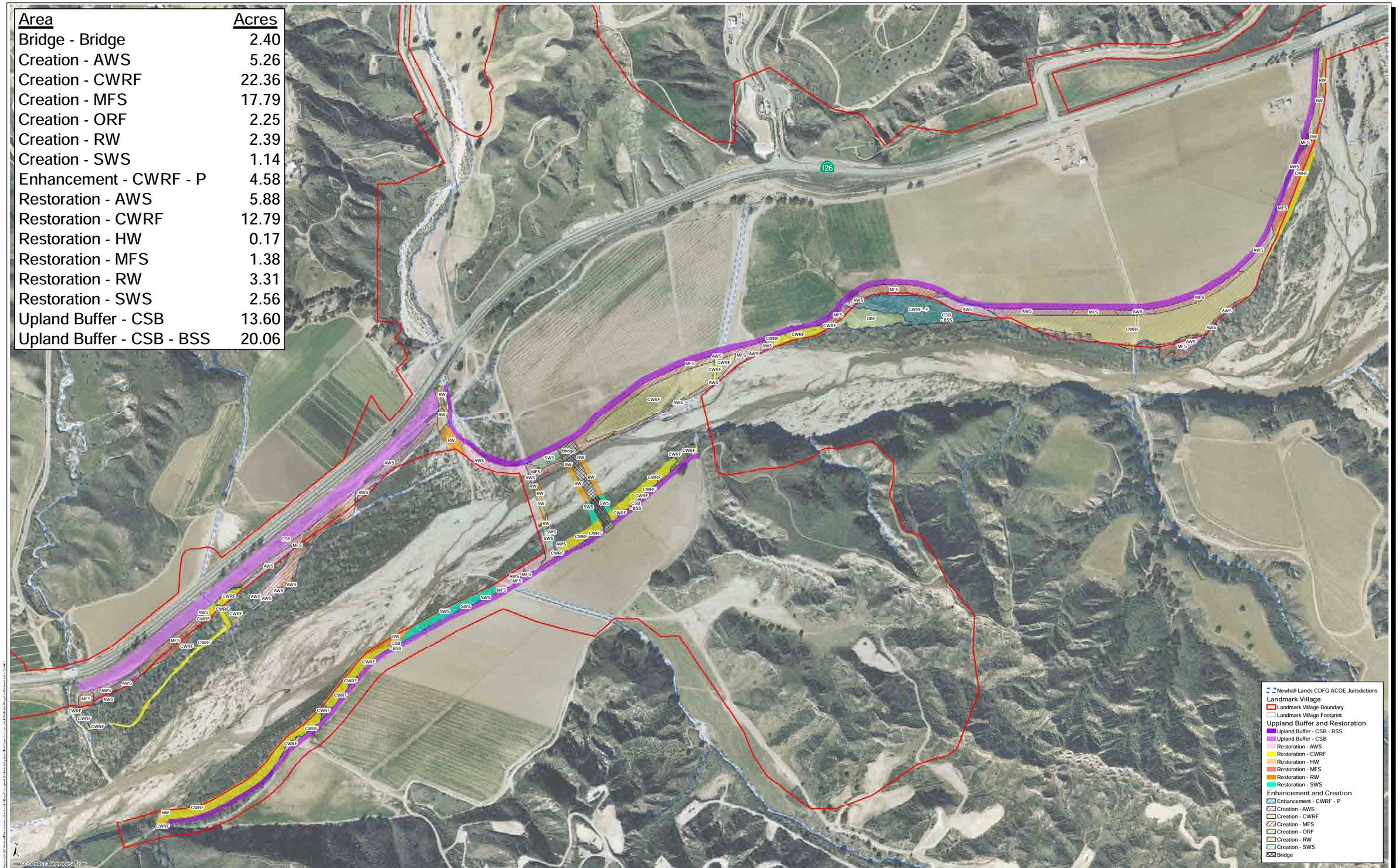
FIGURE 7

Tie-in elevations along the existing riparian vegetation edge will match the flow gradients wherever possible. However, some areas will remain at higher elevations to avoid existing mature riparian vegetation. This will result in a berm-like feature that will be vegetated with appropriate transitional riparian vegetation such as mulefat scrub and arrow weed scrub.

Temporary wetlands impacts will be mitigated through restoration of vegetation communities at the temporary impact site that is equivalent to the impacted vegetation. The restored vegetation communities will have similar native cover and species composition, and the goal of restoration is to create a vegetation community with improved native cover of the original area. In many of the creation areas the functions and values of the vegetation will provide a significant functional lift above the existing functions and values of previous land types (e.g., agriculture, California annual grassland, or disturbed land). In addition to in situ wetlands restoration, giant reed will be removed from adjacent areas of the existing Santa Clara River floodplain and replacement native riparian vegetation will be established in its place. This wetlands enhancement exceeds the mitigation requirement for temporary impacts and credit for this work will be applied to other projects within the NRSP that require wetlands mitigation through enhancement.

4.4.2 Vegetation Communities to be Created

The distribution of the vegetation communities created is depicted on *Figure 8*. In general, the intention of the mitigation design is to create a mosaic of vegetation communities that best reflect the natural riverine condition in which the mitigation project will occur. Southern coast live oak riparian forest and southern cottonwood–willow riparian forest will be situated in association with the lowest elevations of the mitigation area, approximately 6 feet above known groundwater elevations (Allen E. Seward 2007). However, the southern cottonwood–willow riparian forest mitigation area will be graded to incorporate micro-topographic features, including swales and hummocks, that are characteristic of adjacent vegetation community. Individual species will be distributed in accordance with the microclimate that best suits each species. California black walnut trees to be impacted by the proposed project will be inventoried prior to construction and will be incorporated into the southern coast live oak riparian forest at a ratio of 1:1.



Area	Acres
Bridge - Bridge	2.40
Creation - AWS	5.26
Creation - CWRF	22.36
Creation - MFS	17.79
Creation - ORF	2.25
Creation - RW	2.39
Creation - SWS	1.14
Enhancement - CWRF - P	4.58
Restoration - AWS	5.88
Restoration - CWRF	12.79
Restoration - HW	0.17
Restoration - MFS	1.38
Restoration - RW	3.31
Restoration - SWS	2.56
Upland Buffer - CSB	13.60
Upland Buffer - CSB - BSS	20.06

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Landmark Village Conceptual Wetlands Mitigation Plan
Proposed Creation / Restoration

FIGURE
8

The downstream southern cottonwood–willow riparian forest creation area will require a permeable energy dissipater that allows water to flow through the mitigation site but directs high flow water to the south. The structure might be made from concrete "K" rails placed on end in an alternating, interlocking orientation and buried in the channel approximately 15 feet deep. The rails would be spaced apart to provide gaps where water could flow through the structure, but would not allow so much volume as to create scour within the mitigation site. The structure will have no exposed metal that could harm sensitive wildlife, such as unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), nor create a filter that could trap fish. The structure may provide hydraulic benefits for the bridge proposed at the mouth of Long Canyon.

Mulefat scrub and arrow weed scrub will be located on higher elevations, benches, and hummocks that will be incorporated into the site grading plan. These vegetation community types typically occur on drier wetland fringes and in ephemeral channels. Accordingly, the base of the buried bank protection structure will be installed with these two vegetation community types. River terrace features will be created along this edge to create topographic diversity and increase the area of these vegetation community types.

The design anticipates the creation of river wash in association with the existing Castaic Creek and Chiquito Canyon river wash as required for project mitigation as defined in *Table 3*. These areas will undergo minimal revegetation to mirror natural river wash conditions. River wash will be created through the grading process described above. The design anticipates that the designed river wash channel will passively revegetate with a variety of native species as seed and propagules wash onto the mitigation site or migrate from adjacent planted mitigation areas.

Big sagebrush scrub will be installed and established on the wetland fringe and along the lower portion of the buried bank slope. California sagebrush scrub will be established on the upper slope of the buried bank. These upland vegetation communities are well adapted to the conditions that are anticipated to occur along the perimeter of the project. The uplands vegetation is intended to provide a positive buffer area for the wetlands mitigation areas and cover for wildlife during flood events. This buffer will increase the overall functions and values of the wetlands mitigation areas.

4.5 Rationale for Expecting Project Success

The target vegetation communities for the creation/enhancement areas will consist of native plant species that are found in riparian areas adjacent to the creation/enhancement sites. Plant species to be used will consist of those which were observed successfully growing in adjacent native areas and found within the watershed.

The Santa Clara River is subject to high-velocity storm flows during the rainy season and subsurface low flows in the dry season. Although the mitigation/restoration area is outside the designated Federal Emergency Management Agency (FEMA) floodplain, it is situated within the main river channel and may be subject to extraordinarily high water conditions. The plant species to be used in the mitigation project are native species that are adapted to periodic inundation and the natural disturbance regime of the river system. In order to support the riparian vegetation proposed, finish grades for the mitigation project area (as provided by the proposed project) are expected to be lower than the existing elevations and allow dynamic interaction with subsurface low flows, the water table, and periodic seasonal flooding.

In addition, the vegetation communities to be created will be located in hydrologically compatible locations, with less hydric vegetation communities being located in transitional upland locations. For example, big sagebrush scrub portions of the creation/revegetation areas have been placed on the perimeter of the project site, furthest from the active stream channel. Piezometer readings conducted by Allen E. Seward Engineering Geology, Inc. show historic minimum and maximum water table depths to 1994 (*Table 5*; *Figure 9*). Water depths from 1994 to 2004 ranged from 3.5 to 22 feet at minimum and 9 to 33.5 feet at maximum. Construction grading will lower the ground surface so that the water table will be within the root zone of riparian vegetation.

Weed-control measures will be implemented prior to installation of vegetation and for 5 years after the initial installation. These measures may include remedial actions that will be implemented as needed to achieve project success. The suppression of weed growth and reproduction over the extended maintenance period will allow establishing native vegetation to become the dominant vegetation type throughout the area.

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Landmark Village Project
Piezometer Locations

FIGURE 9

TABLE 5
Landmark Village Groundwater Depth Summary

Piezometer	Date of Initial Reading	Minimum Groundwater Depth (Ft.)	Maximum Groundwater Depth (Ft.)	Maximum Variation Between Readings (Ft.)
P-1	9/1/1999	20	33.5	13.5
P-3	9/1/1999	8.5	12.5	4
P-7	10/2/1999	20	23.5	3.5
P-11	4/7/2000	6	10.75	4.75
P-13	4/7/2000	22	26.5	4.5
P-32F	8/3/1994	3.5	12	8.5
P-1R	3/18/2004	6	9	3
P-2R	3/18/2004	8.5	10.75	2.25
P-3R	3/17/2004	7	9	2
P-4R	3/17/2004	19	23	4
P-5R	3/17/2004	11	12.5	1.5

4.6 Cost Estimate

It is estimated that the initial cost for installation and initial maintenance of the mitigation revegetation effort for the total 81.86-acre area will cost approximately **$4,287,773**. This cost estimate includes all installation associated with the mitigation/revegetation and biological construction monitoring through the 120-day plant establishment period.

Long-term maintenance and biological monitoring costs for the proposed 5-year maintenance and monitoring period would total approximately **$1,422,182**, which includes the costs associated with the weed control, site maintenance, quarterly and annual biological monitoring, and preparation of annual year-end reports. The total cost for the entire mitigation and monitoring program is estimated to be **$5,709,955** through the end of the 5-year period. All costs provided include a 15% contingency.

5.0 MITIGATION IMPLEMENTATION PLAN

Implementation of the mitigation design requires a series of coordinated, progressive steps to properly install the proposed mitigation project. Many of these steps are prerequisites for subsequent activities to occur. This section describes the steps that are necessary to implement this mitigation plan, including the creation, restoration, and enhancement of wetlands:

- Initiate enhancement component of project
- Salvage native plant materials for mulch
- Salvage topsoil from existing wetlands areas
- Salvage tree trunks over 12 inches in diameter at breast height (DBH) for wildlife habitat and stabilization structures
- Finish grading and contouring restoration areas to be compatible with adjacent native vegetation and streambed
- Apply salvaged topsoil and test for fertility
- Install irrigation system
- Conduct a minimum of two “grow and kill” cycles, more at the discretion of the project biologist
- Install salvaged native vegetation mulch in temporary impact areas if available
- Install container stock throughout all mitigation and buffer areas
- Apply seed mixes in all mitigation areas
- Begin 120-day plant establishment maintenance and monitoring period
- Begin 5-year long-term maintenance and monitoring period.

5.1 Implementation Schedule

Project implementation should be timed so that project installation is conducted in the late fall/ early winter. This will allow for a complete growing season of establishment to take place before the onset of the fall rainy season. A preliminary implementation timeline is shown in *Table 6*. Prior

to beginning mitigation area grading, the site clearing, mulch/soil salvaging and stockpiling, bank stabilization construction, invasive removal as part of the enhancement program, and topsoil application are to be completed. These are not included in the implementation schedule in order to allow some flexibility in the timing of their completion.

TABLE 6
Preliminary Project Implementation Schedule

Activity	Date
Mitigation area grading (in the first available season after bank protection construction)	March-May – Year 1
Irrigation system installation	June-July – Year 1
"Grow and kill" cycles	August-October – Year 1
Container planting/hydroseed application	October-December – Year 1
Commence 120-day plant establishment period	January – Year 2
Start of 5-year long-term monitoring period	May – Year 2
Year 3 milestone evaluation – remedial planting	October – Year 6
End of 5-year long-term monitoring and maintenance period	June – Year 7

5.2 Sensitive Species Avoidance and Pre-Construction Wildlife Surveys

To comply with mitigation measure Within 30 days of vegetation and/or ground disturbance activities associated with mitigation site grading or invasive species removal that would occur during the nesting/breeding season (March 15th through September 1st), 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.

If an active nest is 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, 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. 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. If the birds begin nesting in vegetation adjacent to the project site, postponement of work will not be required. Depending on proposed activities, the biologist may establish additional setbacks, exclusionary fencing, and/or noise attenuation measures to ensure that nesting birds are not disturbed. 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 on these nests occur. The results of the surveys and any avoidance measures taken shall be

submitted to the County of Los Angeles, CDFG, and USFWS within 30 days of completion of the pre-construction surveys and/or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds.

5.3 Boundary Fencing

Prior to beginning mitigation site preparation work and vegetation restoration efforts, the limit of work shall be confirmed and delineated with protective high-visibility orange construction fencing, if not already in place from site-development construction.

Protective fencing shall be installed in all areas adjacent to native vegetation and/or wetland areas. Protective fencing shall be maintained for the duration of construction activities to maximize habitat protection. Protective fencing shall be removed upon completion of construction and vegetation restoration work as directed by the project biologist.

If heavy equipment or other vehicles require access during the enhancement phase, the work area and access routes shall be clearly delineated by construction fencing to exclude work from non-enhancement areas.

5.4 Erosion Control – Best Management Practices (BMPs)

Erosion-control measures shall be implemented as indicated and in accordance with the adopted project grading/erosion-control plans, associated grading and resource agency permits, and Storm Water Pollution Prevention Program (SWPPP). Erosion-control devices will be implemented and maintained as necessary to prevent erosion and to prevent deposition of sediment off site, including into adjacent riparian areas. The project biologist will monitor BMPs during mitigation construction and grading and provide periodic monitoring reports to Newhall Land.

Installation will start in the late fall/early winter after the likelihood of significant precipitation events has decreased. This will maximize the growing period for plant establishment before the first rainy season. Silt fences, fiber rolls, and construction fencing shall be incorporated into the BMPs based on the construction documents and project biologist recommendation.

The dynamic and volatile seasonal flow patterns of the Santa Clara River are responsible for the variability of storm flow events in the river channel. Storm flow could result in the loss of project fencing and may affect BMPs. Project fencing and BMPs lost/affected due to storm flow events will be replaced or modified, or additional erosion control devices shall be installed at the discretion of the project biologist.

5.5 Vegetation Mulching

It is anticipated that native mulch will be applied to the temporary impact areas to encourage natural recruitment. The source of that native mulch will either be from on site or from Newhall Land's nearby mulching facility. If mulch from on site is used, it will be made from native vegetation removed during vegetation clearing for construction of the bank protection structure. If the on-site mulch must be stored for an extended period of time (greater than approximately 1 month), fresh native mulch from Newhall Land's mulching facility will be acquired and applied to the temporary impact areas following construction. Fresh native mulch created just before mitigation implementation will improve viability of seeds and propagules, as infertility of propagules will increase over time. Ideally, mulch will be no more than a week to a month old depending on the season. The mulch from a nearby project should be created from the same vegetation types with similar species composition. A portion of native topsoil salvaged from the impact areas (*Section 5.6*) will be mixed with mulch and spread over the mitigation areas.

All mulched native vegetation removed during construction will be stockpiled if it is to be used on site. Mulch from various vegetation types will be stored separately to ensure their use in the correct area during mitigation implementation. The mulch will be spread in piles no higher than 3 vertical feet for storage until use. The piles will not be tarped or covered, and should not be irrigated. Irrigating the piles will cause any viable seed to sprout in place. The stockpiled mulch shall be stored in the upland portion of the project site adjacent to the stockpiled topsoil. Orange construction fencing shall be placed around the stockpiled mulch as a BMP and the words "salvaged mulch," along with the name of the vegetation type from which the mulch was created, shall be posted on signage around the pile. If mulch is stockpiled in an area that contains weeds/ weed seed, the top 8 inches of soil shall be stripped before stockpiling the mulch to avoid seed contamination.

If recently-created mulch cannot be found or attained, a possibility exists that some viable native seed/propagules may survive until mitigation site installation in mulch created on site. However, it is anticipated that there will be a significant period of time between harvest and installation, resulting in viable plant matter deteriorating and losing viability. The mulch will primarily provide organic matter to the soil, and secondarily provide a source of viable seed or root/shoot sprouting.

5.6 Soil Salvaging

Following clearing and grubbing work, the topsoil shall be salvaged from native vegetation areas impacted by project construction. Due to the high proportion of weeds in the herbaceous layer, the top 5 to 6 inches will be stripped and used as backfill subsoil or removed from the area. The

existing topsoil has a copious seed bank within the top few inches, including mustard seed and brome grass seed, along with several other invasive weeds that have been depositing seed for several years. Removal of the top few inches of soil will help reduce the amount of weeds that may germinate within the restoration areas. The soil in this area is relatively deep sandy alluvium, so removal of the top few inches will not negatively affect the edaphic conditions.

Soil shall be salvaged to a depth of 12 inches and stockpiled on site following removal of the top weed-seed-laden 5 to 6 inches of soil. The stockpiled topsoil shall be stored in the upland portion of the project site adjacent to the stockpiled mulch. Silt fencing shall be placed around the stockpiled topsoil as a BMP and the words "salvaged topsoil" shall be painted on the silt fence in bright orange paint. If topsoil is stockpiled in an area that contains weeds/weed seed, the top 8 inches of soil shall be stripped before stockpiling the topsoil to avoid seed contamination. In addition, if weeds are present and blooming during the time the soil is stockpiled, the soil shall either be covered with clear plastic or a 30-foot weed-free band shall be kept around the stockpiled soil. "Grow and kill" cycles are planned to ensure that any weed seeds in the salvaged soil are eliminated immediately after irrigation installation and prior to planting.

Upon completion of bank protection installation and rough grading, the stockpiled soil will be used to create a continuous soil cover 36 inches deep over the entire buried bank structure to create the finished grades (*Section 5.7*). A portion of the topsoil shall be incorporated into the mulch prior to application.

Salvaging of the topsoil will help improve edaphic conditions for native seed germination, plant growth, and native vegetation establishment on the buried bank structure. Soil salvaging will also help to preserve soil biota, including mycorrhizal fungi. Once the salvaged soil is graded, but prior to planting, soil tests will be completed to test for suitable growing conditions. The results of soil suitability tests will determine the necessity of soil amendments, fertilizers, and/or mycorrhizae additions.

Topsoil placement and final grading shall be monitored and approved by the project biologist.

5.7 Grading and Site Preparation

Grading of the mitigation areas will be accomplished during general site development and bank stabilization soil cement construction activities. Upon completion of bank protection construction work, the final grades within the restoration areas shall be established by grading the entire wetlands creation area to elevations conducive to native habitat establishment, as depicted in this mitigation plan (see *Figure 7*). Salvaged topsoil shall be dispersed over the restoration areas to a

depth of approximately 12 inches and utilized to create the finished grade conditions. Any soils within the restoration areas that are deemed compacted shall be ripped and/or disked to a depth of 12 inches in two opposing directions and floated out to the satisfaction of the project biologist. Topographic contours of the wetlands mitigation area will include swales and hummocks that mimic the river channel environment. A low-flow channel will constructed in order to create appropriate river wash conditions.

If the quantity of salvaged topsoil is less than expected and is not enough to satisfy the above condition requiring soils be spread approximately 12 inches thick, then salvaged soils will be placed in higher-priority locations. Since one of the main purposes of salvaging topsoil is to improve soil fertility, high priority for salvaged topsoil would be given to areas graded to a greater depth that more likely to have lower soil fertility. Low-priority areas to receive salvaged topsoil include shallowly graded areas and areas where flooding poses a threat to wash newly laid soil away. If these measures still cannot compensate for less salvaged soil than expected, then salvaged soil may be spread at a thickness that will cover all areas of higher priority.

5.8 Weed Removal

This section addresses control of weed recruitment within the project during project installation. Prior to project installation, the mitigation site must be free of invasive non-native annual grasses and forbs as well as persistent perennial exotic species such as giant reed (*Arundo donax*) and saltcedar (*Tamarix ramosissima*). In addition to the wetlands creation site, *Arundo* removal will be conducted on the adjacent existing river channel to facilitate flow onto and off of the wetlands creation site. As the existing soil of the wetland creation area will be completely removed and replaced, any existing weeds and seed bank will be removed and the remaining weed seed bank will be minimal. However, if there is a significant lag time between initial excavation and mitigation project installation, it is possible that weeds may recruit and reproduce within that time period. Weed control during the 120-day plant establishment period and the long-term maintenance period is addressed in *Section 6.2*.

Following installation of the irrigation system and prior to installation of plant material, “grow and kill” weed-removal treatments will be conducted by the restoration contractor. “Grow and kill” cycles consist of irrigation over an approximately 2-week period to encourage non-native seedling emergence. Once weeds begin to germinate and grow, a foliar application of an appropriate translocating herbicide is applied to kill target weeds. The cycle shall be repeated a minimum of two times. Additional cycles may be required, as recommended by the project biologist.

Physical removal of non-native plants, including the roots, is the best method for those species for which the root ball can readily be pulled out with the above-ground portions of the plant. These species will be physically removed before seed-set. If hand removal is possible only after seed-set, then seed heads will be cut off, bagged, and removed from the site prior to the weed removal.

The project biologist will coordinate with the restoration contractor/pesticide applicator to identify specific locations where herbicides may be used. Chemical treatment may follow hand and mechanical removal activities that are conducted to increase the effectiveness of subsequent chemical treatment, or for persistent species in which mechanical removal is impractical.

All herbicide treatments must be specified by a licensed pest control advisor and applied by a licensed pest control applicator. Any chemical use should be conducted using methods that minimize effects to adjacent/desirable native species, such as brush application or spot spraying, as directed by the licensed pest control advisor. Only herbicides approved for use in wetland areas will be used in or near flowing waters, as approved by permitting agencies.

Primary herbicide applications should be timed to match when target plant is most susceptible to herbicide. For example, giant reed is most susceptible to herbicide applications during late summer and early fall as it translocates energy into its root mass. As it translocates energy, the spread of herbicide through the plant's system will be easier. Follow-up applications may be necessary for highly aggressive species that cannot be killed with one herbicide application. Follow-up herbicide treatment should be done at the biologically appropriate time, when the recovering plants are still relatively small and before they have time to regain strength and vigor.

5.9 Plant Palette for Mitigation/Revegetation Areas

Both the project creation and restoration areas will be prepared and revegetated with native species. The planting palettes are shown in *Tables 7–12*. The distribution of vegetation community types is shown on *Figure 8*. Planting will follow grading, installation of salvaged soil and mulch, irrigation system installation, and "grow and kill" weed-control cycles.

The planting palettes have been designed to replace the impacted vegetation communities and to create additional appropriate native vegetation communities through a formulated composition of container stock and seed mix. The species included are important components of the revegetation program.

TABLE 7
Southern Cottonwood–Willow Riparian Forest Plant Palette (39.73 Acres)

Seed Mix			
Botanical Name	**Common Name**	**Minimum Percent Live Seed**	**Application Rate (Lbs./Acre)**
Ambrosia acanthicarpa	Annual bursage	60	2
Amsinckia menziesii	Yellow fiddleneck	25	3
Artemisia douglasiana	Mugwort	10	2
A. dracunculus	Tarragon	10	1
Clarkia purpurea	Winecup clarkia	80	1
Elymus glaucus	Blue wildrye	85	2
Eriogonum gracile var. *gracile*	Buckwheat	15	1
E. fasciculatum	Flat-topped buckwheat	10	2
Gnaphalium californicum	California everlasting	2	1
Isocoma menziesii	Goldenbush	15	2
Lasthenia californica	Coast goldfields	50	1
Layia platyglossa	Tidy tips	60	1
Leymus triticoides	Creeping wild rye	80	1
Lupinus bicolor	Lindley's annual lupine	90	2
Mimulus aurantiacus	Bush monkeyflower	2	2
Phacelia cicutaria	NCN	80	1
Verbena lasiostachys	Western verbena	50	1
Total Lbs./Acre			**26**

Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Baccharis salicifolia	Mulefat	1 gallon	8	1,246
Ericameria palmeri var. *pachylepis*	Goldenbush	1 gallon	10	350
Leymus condensatus	Giant wild rye	1 gallon	6	963
Pluchea sericea	Arrow weed	1 gallon	8	2,462
Populus fremontii	Fremont cottonwood	1 gallon	20	3,152
Quercus agrifolia	Coast live oak	1 gallon	25	252
Rhus trilobata	Skunkbrush	1 gallon	4	1,969
Ribes aureum	Golden currant	1 gallon	6	1,051
Salix exigua	Sandbar willow	1 gallon	10	3,852
S. laevigata	Red willow	1 gallon	12	1,094
S. lasiolepis	Arroyo willow	1 gallon	14	3,502
Salvia mellifera	Black sage	1 gallon	6	263
Sambucus mexicana	Mexican elderberry	1 gallon	12	569
Total				**20,725**

TABLE 8
Mulefat Scrub Plant Palette (19.17 Acres)

Seed Mix			
Botanical Name	**Common Name**	**Minimum Percent Live Seed**	**Rate (Lbs./Acre)**
Ambrosia acanthicarpa	Annual bursage	60	2
Artemisia douglasiana	Mugwort	10	2
Epilobium ciliatum	California cottonweed	48	1
Iva axillaris	Poverty weed	15	2
Lessingia glandulifera	Lessingia	80	1
Phacelia cicutaria	NCN	80	1
Pluchea odorata	Marsh fleabane	15	0.5
Senecio flaccidus var. *douglasii*	Butterweed	5	5
Total Lbs./Acre			**14.5**

Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Baccharis salicifolia	Mulefat	1 gallon	8	7,383
Eriodictyon crassifolium var. *nigrescens*	Yerba santa	1 gallon	6	958
Opuntia basilaris var. *ramosa*	Beaver-tail cactus	1 gallon	6	656
Pluchea sericea	Arrow weed	1 gallon	8	1,532
Ribes aureum	Golden currant	1 gallon	6	958
Salix exigua	Sandbar willow	1 gallon	10	1,341
S. lasiolepis	Arroyo willow	1 gallon	14	302
Sambucus mexicanus	Mexican elderberry	1 gallon	12	383
Total				**13,513**

TABLE 9
Arrow Weed Scrub Plant Palette (11.14 Acres)

Seed Mix			
Botanical Name	**Common Name**	**Minimum Percent Live Seed**	**Rate (Lbs./Acre)**
Ambrosia acanthicarpa	Annual bursage	60	2
Artemisia californica	California sagebrush	10	1
A. tridentata	Big sagebrush	10	1
Atriplex canescens ssp. *canescens*	Four-wing saltbush	35	1
Clarkia purpurea	Winecup clarkia	80	1
Eriogonum gracile var. *gracile*	Buckwheat	15	1
E. fasciculatum	Flat-topped buckwheat	10	5
Leymus triticoides	Alkali rye	80	1
L. condensatus	Giant wild rye	70	2
Phacelia cicutaria	NCN	80	1
Total Lbs./Acre			**16**

Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Baccharis salicifolia	Mulefat	1 gallon	8	1,114
Pluchea sericea	Arrow weed	1 gallon	8	3,342
Salix exigua	Sandbar willow	1 gallon	8	1,114
Total				**5,570**

TABLE 10
Southern Coast Live Oak Riparian Forest Plant Palette (2.25 Acres)

Seed Mix			
Botanical Name	**Common Name**	**Minimum Percent Live Seed**	**Rate (Lbs./Acre)**
Amsinckia menziesii var. *menziesii*	Yellow fiddleneck	25	7.0
Artemisia californica	California sagebrush	10	2.0
Bromus carinatus	California brome	85	6.0
Clarkia purpurea	Winecup clarkia	80	0.5
Collinsia heterophylla	Purple Chinese houses	85	2.0
Eriogonum gracile var. *gracile*	Buckwheat	15	1.0
E. fasciculatum	Flat-topped buckwheat	10	6.0
Isocoma menziesii	Goldenbush	15	3.0
Lasthenia californica	Coast goldfields	50	0.5
Leymus triticoides	Alkali rye	80	3.0
Mimulus aurantiacus	Bush monkeyflower	2	2.0
Nassella cernua	Nodding needlegrass	75	3.0
Nemophila menziesii	Baby blue-eyes	75	2.0
Phacelia cicutaria	NCN	80	1.0
Trichostema lanatum	Woolly bluecurls	40	2.0
Total Lbs./Acre			41.0

Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Juglans californica	Black walnut	1 gallon	20	25
Leymus condensatus	Giant rye grass	1 gallon	6	98
Marah macrocarpus	Wild cucumber	1 gallon	30	15
Opuntia littoralis	Coastal prickly-pear	1 gallon	6	98
Pluchea sericea	Arrow weed	1 gallon	8	80
Prunus ilicifolia	Holly-leaf cherry	1 gallon	12	68
Quercus agrifolia	Coast live oak	1 gallon	20	172
Rhus trilobata	Squaw bush	1 gallon	6	272
Ribes californicum	California gooseberry	1 gallon	6	204
Rosa californica	California rose	1 gallon	6	204
Sambucus mexicana	Mexican elderberry	1 gallon	12	68
Total				**1,304**

TABLE 11
Big Sagebrush Scrub Plant Palette (13.60 acres)

Seed Mix			
Botanical Name	**Common Name**	**Minimum Percent Live Seed**	**Rate (Lbs./Acre)**
Artemisia tridentata ssp. *tridentata*	Big basin sagebrush	10	1
Atriplex canescens ssp. *canescens*	Four-wing saltbush	35	1
Chrysothamnus nauseosus	Rubber rabbit brush	10	3
Eriastrum densifolium	Perennial eriastrum	5	1
Eriogonum gracile var. *gracile*	Buckwheat	15	1
Gnaphalium californicum	California everlasting	2	1
Isocoma menziesii	Goldenbush	15	3
Lessingia glandulifera	Lessingia	80	1
Lupinus bicolor	Lindley's annual lupine	90	6
Phacelia cicutaria	NCN	80	2
Total Lbs./Acre			**20**

Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Artemisia tridentata ssp. *parishii*	Sagebrush	1 gallon	6	1,973
Artemisia tridentata ssp. *tridentata*	Great basin sagebrush	1 gallon	6	5,440
Opuntia californica var. *parkeri*	Cane cholla	1 gallon	6	985
Eriodictyon crassifolium var. *nigrescens*	Yerba santa	1 gallon	6	1,360
Eriogonum fasciculatum	Flat-topped buckwheat	1 gallon	6	985
Malacothamnus fasciculatus	Chaparral mallow	1 gallon	6	815
Prunus ilicifolia	Holly-leaf cherry	1 gallon	10	356
Quercus agrifolia	Coast live oak	1 gallon	25	59
Yucca whipplei	Our Lord's candle	1 gallon	6	678
Total				**12,651**

TABLE 12
California Sagebrush Scrub Plant Palette (20.06 acres)

Seed Mix				
Botanical Name	**Common Name**	**Minimum Percent Live Seed**		**Rate (Lbs./Acre)**
Artemisia californica	California sagebrush	10		6
Brickellia californica	California brickellbush	3		2
Chaenactis glabriuscula	Yellow pincushion	10		2
Encelia actoni	Acton's encelia	15		5
Eriogonum fasciculatum	Flat-topped buckwheat	10		6
Gnaphalium californicum	California everlasting	2		1
Isocoma menziesii	Goldenbush	15		2
Lasthenia californica	Coast goldfields	50		1
Lessingia glandulifera	Lessingia	80		1
Lotus scoparius var. *scoparius*	Deerweed	85		1
Lupinus bicolor	Lindley's annual lupine	90		6
Nassella lepida	Foothill needle grass	65		1
N. pulchra	Purple needlegrass	75		1
Phacelia cicutaria	NCN	80		1
Trichostema lanatum	Woolly bluecurls	5		4
Total Lbs./Acre				**40**
Container Plants				
Botanical Name	**Common Name**	**Size**	**Spacing (Feet on Center)**	**Total Quantity**
Artemisia californica	California sagebrush	1 gallon	5	6,459
Isomeris arborea	Bladderpod	1 gallon	6	1,122
Leymus condensatus	Giant wild rye	1 gallon	6	1,122
Malacothamnus fasciculatus	Chaparral mallow	1 gallon	5	3,230
Opuntia littoralis	Prickly-pear cactus	1 gallon	6	1,122
Ribes californicum	California gooseberry	1 gallon	5	3,230
Salvia leucophylla	Purple sage	1 gallon	6	2,244
Total				18,529

5.9.1 Container Planting

Plant materials used to implement the planting plan will include 1-gallon container stock, mulched material, and native seed as indicated in *Tables 7–12*. All container plants will be checked for viability and general health upon arrival at the mitigation site by the project biologist. Plant materials not meeting acceptable standards will be rejected. Plant species and quantities will be confirmed after delivery by the project biologist. General locations for

installation will be designated on the construction documents. Specific locations for installation will be marked on site temporarily with pin flags by the project biologist.

Standard planting procedures will be employed for installing container plants. Holes approximately twice the size of the root ball of the plant will be dug using a post hole digger or power auger. Holes will be filled with water and allowed to drain immediately prior to planting. Backfill soil containing amendments (as directed by the project biologist) will be placed in every planting hole following soaking, with the top 1 to 2 inches of the root ball entirely below grade. Woody container plant species specified by the project biologist will be planted into the soil slightly deeper than this standard, approximately 2 to 4 inches above the root collar of the plant. This additional planting depth for the above species will help ensure sufficient rooting strength and provide additional protection against seasonal scour and/or uprooting due to high flow velocities after winter storm events. Due to the soft nature of the alluvial soils on site, deep-rooted species on the whole should not have problems extending their roots in the soil.

Mulch will be raked around installed container plants to a diameter of 2 feet or 1.5 times the drip line, whichever is greater. Mulch will be 3 to 4 inches deep. This mulch is in addition to the mulch made from salvaging native material from on site. Herbivory cages are not expected to be necessary, as a certain level of herbivory is planned for and built into plant palettes. Should herbivory increase beyond expected amounts, the project biologist has the ability to take steps to counteract herbivory. See *Section 9.1.1* for more information on excessive herbivory procedures.

5.9.2 Seed Application (Hydroseed and/or Drill Seeding)

Following container plant installation, mitigation areas will be stabilized with specified hydroseed mixes (*Tables 7* to *12*) and a light application of a soil binder, primarily for erosion and weed control. Individual mixes have been prescribed for different vegetation communities. Labels for each mixture will be inspected and approved by the project biologist prior to mixing and application. All mixes are to include the specified seed mix at the prescribed rate per acre, virgin wood cellulose fiber mulch at 2000 pounds per acre, if applicable, commercial fertilizer at the specified rate as directed by the project biologist during finish grading, and a commercial binder (“Guar gum,” “super tack,” or equivalent) at 100 pounds per acre.

Applying seed via hydroseed instead of drill seeding will allow for the installation of the irrigation system prior to “grow and kill” cycles being conducted before seeding. Irrigation during the “grow and kill” cycles will greatly increase the germination among weeds and improve our ability to remove them from the seed bank.

Drill seeding may be useful in areas where an irrigation system is not being installed (i.e., the temporary mitigation areas) if/when seeding is decided to be necessary. If drill seeding is decided upon as the method of application, it must be done prior to container planting, which could be done immediately after the drill seeding.

5.10 Irrigation System

The primary goal of this creation/revegetation project is to establish native vegetation communities capable of maintaining and supporting themselves in perpetuity. However, native container plants and seed will require irrigation for establishment on the mitigation site, especially during summer months. A temporary above-ground overhead spray irrigation system will be installed and shall continue as needed to meet the 3- and 5-year performance criteria regarding plant survivorship and growth. Where necessary, drip irrigation may also be used to deliver irrigation water directly to woody container plantings. The irrigation system shall be utilized to support the container stock plantings and seed mixtures until they can survive on their own based on observed and predicted seasonal rainfall and effective plant rooting depth.

All irrigation will be installed by the restoration contractor per the construction documents and specifications. The irrigation system will be designed with above-ground components to facilitate removal once the system is decommissioned.

Irrigation will be used during the plant establishment period of the project. It is planned that irrigation use will be discontinued at least 2 years before the end of the 5-year maintenance period to demonstrate the self-sustainability of the established vegetation communities. The irrigation may be reactivated in order to achieve the 5-year success criteria.

Irrigation design and layout will be provided with the final construction plans. The irrigation system may utilize a series of solar-operated or battery-operated controllers that operate independent irrigation circuits, minimizing irrigation maintenance requirements for the site. Irrigation on site will likely consist of polyvinyl chloride piping (UV-PVC), staked at grade with coverage provided by spray heads.

Consideration shall be taken to keep irrigation components out of the way of flood disturbance. Should portions of the irrigation system become damaged or lost due to unforeseen flood events, the restoration contractor will be required to replace lost components and/or modify the design based on recommendation of the project biologist.

6.0 MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

Because the goal of the maintenance and monitoring plan is to establish a natural riparian system that can support itself without maintenance, the primary effort of the maintenance plan is concentrated in the first few seasons of plant growth following the enhancement efforts, when weeds can easily out-compete native plants. The intensity of the maintenance activity is expected to subside each year as the native plant materials become more established and local competition from non-native plants for resources in the mitigation areas is minimized through ongoing control.

6.1 Maintenance Activities

Maintenance activities will be conducted concurrently with the installation of the mulch, container plants, and seed materials in the mitigation areas, and will continue throughout the initial 120-day establishment period and through the long-term maintenance and monitoring period, concluding once success criteria have been met. Contractor maintenance activities on the site will be conducted monthly during the 120-day establishment period and quarterly for the 5-year monitoring and maintenance period.

6.2 Weed Control

Ongoing weed-control activities will occur within the mitigation areas throughout the 5-year maintenance period. Weed eradication will consist of the complete removal of selected non-native vegetation (i.e., seed heads, stems, roots). All debris and slash generated from weed-removal activities will be disposed of off site in a legally acceptable manner. Root removal will not necessarily apply to trees. The cover of non-native plant species within the project area shall not exceed 10% at any time within the 5-year maintenance period. The cover of non-native perennial invasive species will not exceed 0% in any of the 5 years.

Target weed species include all perennial exotic and weedy annual forb species listed on the CAL-IPC California Invasive Plant Inventory. Specific focus will be on species that pose a risk to the development of the proposed vegetation communities. Appropriate measures for control will be determined based on current literature and known methods of control.

Weed-control measures may include direct physical or mechanical removal (e.g., cutting with weed whip machines, mowing) and herbicide application. Weeding will be performed as recommended by the project biologist to keep any weeds establishing on the mitigation site at manageable levels. Specified weed species will be controlled before seed-set. (Other species that appear may need to be controlled if deemed necessary by the project biologist.)

Non-native grasses will be controlled within the project boundaries during the long-term monitoring period, but complete eradication may not be possible due to the ubiquitous nature of their distribution within the watershed. Presence of non-native grasses will not be used as a criterion for project success. Herbicide control will be used for persistent plant species specified by the project biologist, as well as any additional perennial species that are low-growing and are difficult to control by other methods. The restoration contractor should coordinate with the project biologist and Newhall Land to identify specific sites where chemical herbicide may be used. Any herbicide treatment must be specified by a licensed pest control advisor and applied by a licensed pest control applicator. See *Section 5.8* for additional description of weed control.

6.3 Trash Removal

Trash will be removed from the mitigation areas by hand during maintenance visits. Trash consists of all man-made materials, equipment, or debris dumped, thrown, washed, blown, and left within the mitigation areas. Trash and inorganic debris washed or blown onto the mitigation site will be removed regularly. Deadwood and leaf litter from native trees and shrubs will not be removed. Downed logs and leaf litter provide valuable micro-habitats for invertebrates, reptiles, small mammals, and birds. In addition, the decomposition of deadwood and leaf litter is essential for the replenishment of soil nutrients and minerals.

6.4 Irrigation Maintenance

All mitigation areas will be irrigated to promote plant survival during the drier parts of the year, primarily the summer months. Irrigation may be used in winter months to simulate an average or above average rain season if natural precipitation is lacking. It is expected that the irrigation system will be utilized for a maximum of 3 years, excepting conditions for implementation of adaptive management activities. Irrigation volume will be gradually reduced over time to acclimate plants to a non-irrigated condition prior to complete cessation of irrigation. Irrigation from June to November may be minimized to allow plants to experience normal drought cycles and to promote appropriate root growth. The restoration contractor will maintain the irrigation system at the optimum level of operation.

Consultation with the project biologist will be necessary to determine the timing for the cessation of irrigation. Irrigation should stop at the earliest possible date without risking substantial loss of plantings. It is expected that the irrigation system will be abandoned no earlier than the end of Year 1. Irrigation will be most likely be discontinued by the end of Year 3 of the 5-year monitoring and maintenance period. Irrigation components, such as valves and sprinkler heads, may be salvaged for reuse elsewhere at the end of the establishment period. Again, if irrigation is

deemed necessary beyond Year 3, adaptive management methods will be necessary to bring the project up to success criteria.

7.0 MONITORING PLAN FOR THE MITIGATION AREAS

Monitoring of the mitigation site has a two-fold purpose: (1) to monitor the progress of the native revegetation area by assessing whether native vegetation establishment has achieved the performance criteria established for the project and (2) to direct and monitor the maintenance activities and determine remedial actions in a manner that ensures that appropriate maintenance occurs in a timely manner. The monitoring shall be performed by a qualified biologist or habitat restoration specialist. Following installation at the mitigation sites, monitoring shall be required for 5 years.

The project biologist shall be responsible for monitoring the activities of all contractors associated with mitigation implementation during finish grading, soil amending, irrigation installation, mulch application, container planting, and seeding; for monthly monitoring during the 120-day plant establishment/maintenance period; and for quarterly and biannual monitoring during the 5-year maintenance and monitoring period. The project biologist will communicate and coordinate with the restoration contractor to assure the timely performance of project activities. The project biologist shall submit progress reports to Newhall Land during installation and long-term monitoring site visits and annual reports to Newhall Land, ACOE, CDFG, and RWQCB each year on the anniversary date during the 5-year monitoring period.

7.1 Construction/Installation Monitoring

The project biologist will make regular site visits during key milestones associated with project implementation. The project biologist also will review activities for conformance to this plan, environmental permit conditions, and the requirements of contract plans and specifications. Each site observation visit will be documented in an observation report. Construction shall be photo-documented and will be included in observation reports, as needed.

7.2 120-Day Plant Establishment Period and Monitoring

Upon successful completion of project installation as determined by the project biologist, the 5-year long-term monitoring phase will begin. During the first 120 days of the long-term monitoring period, container plants will be monitored for health and vigor. Should any of the container plants die during the 120-day plant establishment period, they will be replaced in kind at the expense of the restoration contractor to 100% of the original quantity at the recommendation of the project biologist. Should seed/hydroseed fail to germinate within the

120-day plant establishment period, it shall be reapplied at the expense of the contractor at the recommendation of the project biologist. The project biologist will perform monitoring monthly (every 30 days) during the 120-day plant establishment period and will make recommendations to the contractor to ensure conformance with the 120-day plant establishment requirements.

7.3 Monitoring Methods

After each site visit, a site observation report will be provided to Newhall Land and to the restoration contractor. The site observation report will include a description of the project status, site conditions, and any maintenance recommendations or remedial actions.

Monitoring of the mitigation areas will be performed by the project biologist during the 120-day establishment period and quarterly throughout the duration of the project. Both horticultural (qualitative) monitoring and biological (quantitative) monitoring will be conducted at the mitigation areas. Permanent photo-documentation stations will be established along each transect to record the progress of the mitigation site and graphically record plant establishment over the 5-year period. On an annual basis, the project biologist will provide a summary of results, in the annual report, of the monitoring activities completed during the prior year.

7.4 Performance Standards and Success Criteria

Performance criteria have been established for the southern cottonwood–willow riparian forest, arrow weed scrub, and mulefat scrub vegetation community types to be created on site. The criteria are based upon expected vegetative development within a properly functioning native vegetation of the same type, and are listed in *Table 13*. These performance criteria will be utilized to assess the annual progress of the restoration areas, and are regarded as interim project objectives designed to achieve the final goals. Fulfillment of these criteria will indicate that the wetlands mitigation areas on the project site are progressing toward the vegetation community types and functions that constitute the long-term goals of the plan. Performance criteria for areas permanently impacted (creation areas) include a minimum container plant survivorship, an average height requirement of planted tree species, and a minimum required native plant cover. Performance criteria for river wash have not been established because the ultimate goal is to recreate the mostly barren nature of the vegetation community type and the routine scouring. Performance criteria for temporarily impacted areas (revegetation areas) include minimum container plant survivorship, an average height requirement of mitigated tree species, and a minimum required native plant cover (*Table 14*).

TABLE 13
Performance Guidelines for Creation Areas (Permanent Impact)

Criteria	Year 1[1]	Year 2	Year 3	Year 4	Year 5
Container plant survival[2]	100%	80%	80%	70%	70%
Container Tree Heights					
Fremont cottonwood	4 ft.	6 ft.	7 ft.	12 ft.	15 ft.
Coast live oak	2 ft.	3 ft.	5 ft.	6 ft.	7 ft.
Arroyo willow	4 ft.	6 ft.	10 ft.	12 ft.	12 ft.
Sandbar willow	3 ft.	3 ft.	4 ft.	5 ft.	6 ft.
Native Cover					
Southern cottonwood–willow riparian woodland	15%	30%	40%	60%	80%
Arrow weed scrub	10%	20%	34%	55%	75%
Mulefat scrub	10%	20%	25%	40%	50%
Southern coast live oak riparian forest	15%	25%	35%	50%	70%
Perennial non-native/exotic cover[3]	0%	0%	0%	0%	0%

1 Percentages based upon visual estimates.
2 All dead plants shall be replaced unless their function is anticipated to be performed by natural recruitment.
3 The cover of non-native plant species at the mitigation sites shall not exceed 10% at any time within this 5-year period.

TABLE 14
Performance Guidelines for Revegetation Areas (Temporary Impact)

Criteria	Year 1[1]	Year 2	Year 3	Year 4	Year 5
Container plant survival[2]	—	100%[4]	80%[4]	80%[4]	70%[4]
Container Tree Heights					
Fremont cottonwood	—	4 ft.[4]	6 ft.[4]	7ft.[4]	12ft.[4]
Arroyo willow	—	4 ft.[4]	6 ft.[4]	10 ft.[4]	12 ft.[4]
Sandbar willow	—	3 ft.[4]	3 ft.[4]	4 ft.[4]	5 ft.[4]
Native Cover					
Southern cottonwood–willow riparian woodland	15%	30%	45%	60%	80%
Arrow weed scrub	10%	20%	34%	55%	75%
Mulefat scrub	10%	20%	25%	40%	50%
Perennial non-native/exotic cover[3]	0%	0%	0%	0%	0%

1 Percentages based upon visual estimates.
2 All dead plants shall be replaced unless their function is being performed, or is reasonably anticipated to be performed, by natural recruitment.
3 The cover of non-native plant species at the mitigation sites shall not exceed 10% at any time within this 5-year period.
4 Only required if native cover does not reach target native cover at the end of Year 1 and project biologist requires remedial seeding/planting.

If mitigation efforts fail to meet the performance standards listed in any one year, the project biologist may recommend remedial actions to be implemented (e.g., supplemental planting, seeding, transplanting) that will enhance the vegetation communities to a level in conformance with these standards. In addition, if native plant cover does not reach 50% of the pre-construction plant cover in the revegetation areas, these areas will be revegetated. River wash will not need to reach 50% of the pre-construction plant cover due to periodic scouring. Scouring is a regular disturbance with this vegetation community that makes predicting plant cover impossible. Scouring will provide new seeds/propagules to replace the plants that are swept away.

7.5 Qualitative Monitoring

Data on native vegetation coverage, weed presence, and site progress will be collected during monitoring visits to be used in the annual monitoring report. Qualitative monitoring will be conducted to assess native container plant vigor and development, seedling recruitment from native hydroseed and natural sources, soil moisture content, presence/absence of plant pests or diseases, erosion and/or drainage conditions on site, presence/absence of non-native or invasive plant species, trash or debris accumulation, wildlife presence/absence, and project fencing. All qualitative monitoring visits to the mitigation site will be documented with a monitoring report, which will be forwarded to Newhall Land. Any project deficiencies will be noted in the monitoring report, with accompanying recommendations for maintenance or remedial actions.

7.6 Quantitative Monitoring

Quantitative monitoring will be conducted to determine container plant survivorship/mortality, total native species cover and composition, and total non-native species cover and composition. Quantitative monitoring will be conducted by establishing permanent vegetation transects within the mitigation areas at random locations at the end of Year 1. These transects will be utilized to help determine achievement of the yearly performance standards. Permanent photo-documentation stations will be established along each transect to record the progress of the mitigation site and graphically record plant establishment over the 5-year period.

Transects will be sampled using the point-intercept method. A transect tape will be run between two posts and a vegetative intercept line will be visually projected above and below the tape at every half-meter mark. Each native or non-native species that intercepts the projected line will be recorded. In addition to species, a vertical stratum for each “hit” will also be recorded. Vertical strata include the herbaceous layer (0.0 meter–1.0 meter), shrub layer (1.0 meter–3.0 meters) and canopy layer (3.0 meters and higher). All plant species present within a 5-meter-wide “species richness” portion of each transect will be recorded. All data will be utilized to determine total

percent plant cover, vertical structural diversity, percent native cover, percent non-native cover, overall species richness and diversity, and target species growth. Quantitative monitoring will be conducted once annually in the fall at the end of the growing season to capture the project's complete growth beginning in Year 1 and extending through Year 5 of the mitigation project. Approximately twenty transects will be installed in total; each vegetation community type shall be sampled with a minimum of three transects. Transects will be 50 meters long, or the maximum length possible in areas with less than 50 linear meters available. Transect locations will be established by the project biologist.

7.7 Functional Hybrid Assessment (FHA) Monitoring and Criteria

In order to more effectively evaluate functional criteria for the varying vegetation communities on site, three sets of evaluation criteria were established: one for southern cottonwood–willow riparian forest, mulefat scrub, and arrow weed scrub; one for southern coast live oak riparian forest; and one for river wash. The evaluation criteria with associated scores for each of the functional categories are described below.

Criteria for Southern Cottonwood–Willow Riparian Forest, Mulefat Scrub, and Arrow Weed Scrub

Vegetation Community – Structural Diversity

Score	Evaluation Criteria
0	Site permanently converted to land use that will not be able to support native riparian vegetation, such as housing, agricultural, or concrete channel.
0.2	No existing riparian vegetation (e.g., covered with annual grasses and scrub, or bare ground). However, site has the potential for revegetation without extensive structural modification.
0.4	Vegetated areas of the site contain sparse, scattered, patchy, or remnant riparian vegetation that is immature and/or lacks structural (vertical) diversity.
0.6	The patches of riparian vegetation on the site contain riparian trees and saplings (i.e., perennial dicots), but contain no, or poorly-developed, shrub understory.

0.8 The patches of riparian vegetation on the site contain riparian trees and saplings (for southern cottonwood–willow scrub and southern coast live oak riparian forest), plus a well-developed native shrub understory.

1.0 The patches on the site are structurally diverse. They contain riparian trees and saplings (for southern cottonwood–willow forest) and native seedlings, as well as developed native shrub understory and herbaceous wetlands.

Vegetation Community – Coverage and Spatial Diversity

Score	Evaluation Criteria
0	Site permanently converted to land use that will not be able to support native riparian vegetation, such as housing, agricultural, or concrete channel.
0.2	No existing riparian vegetation (e.g., covered with annual grasses and scrub, or bare ground). However, site has the potential for revegetation without extensive structural modification.
0.4	Patches of monotypic riparian vegetation covering up to 50% of the site, interspersed among grasses or bare ground.
0.6	Patches of diverse riparian vegetation covering up to 30% of the site, interspersed among grasses, exotic plants, or bare ground; AND/OR greater than 50% of the site covered with monotypic patch(es) of riparian vegetation, interspersed among grasses or bare ground.
0.8	Diverse riparian vegetation covering between 30% and 70% of the site (e.g., strips or islands of riparian vegetation communities, interspersed in open space).
1.0	Diverse riparian vegetation (e.g., at least three different genera of riparian vegetation present) covering between 70% and 100% of the site, interspersed in open space.

Percent Exotic, Invasive Vegetation

Score	Evaluation Criteria
0	Site is covered with pure stands of exotic vegetation or lacks any riparian vegetation.
0.2	Site is covered by 70% to 99% exotic vegetation.
0.4	Site is covered by 40% to 69% exotic vegetation.

0.6 Site is covered by 10% to 39% exotic vegetation.

0.8 Site is covered by 5% to 9% exotic vegetation.

1.0 Site is covered by less than 5% exotic vegetation.

Hydrologic Regime of Riparian Zone

Score	Evaluation Criteria
0	No regular supply of water to the site. Site not associated with any water source, surface drainage, impoundment, or groundwater discharge.
0.2	Water supply to the site is solely from artificial irrigation (e.g., sprinklers, drip irrigation). No natural surface drainage, natural impoundment, groundwater discharge, or other natural hydrologic regime.
0.5	Site is sustained by natural source of water, but is not associated with a stream, river, or other concentrated flow conduit. (For example, the site is sustained by groundwater or urban runoff.) There is no evidence of riparian processes, such as overbank flow, scouring, or deposition.
0.7	Site is within or adjacent to an impoundment on a natural water course that is subject to fluctuations in flow or hydroperiod.
1.0	Site is within or adjacent to a stream, river, or other concentrated flow conduit that provides the primary source of water to the site. This site contains some evidence of riparian processes, such as overbank flow, scouring, or deposition.

Micro- and Macro-Topographic Complexity

Score	Evaluation Criteria
0	Channel is contained in a concrete-lined channel, culvert, etc.
0.2	Flood-prone area is characterized by a homogeneous, flat earthen surface with little to no micro- and macro-topographic features.
0.5	Flood-prone area contains micro- and/or macro-topographic features such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, or hummocks, but is predominantly homogeneous or flat surfaced.

0.8 Floodplain is not predominantly homogeneous and is characterized by micro-topographic features such as pits, ponds, hummocks, or bars. However, there are no macro-topographic features such as braiding, secondary channels, or backwaters.

1.0 Flood-prone area is characterized by micro- and macro-topographic complexity such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, hummocks, etc.

Biogeochemical Processes – Vegetation Roughness and Organic Carbon

Score	Evaluation Criteria
0	Channel is contained in a concrete-lined channel, culvert, etc., with little to no vegetation or detritus.
0.2	Site can support grasses, forbs, or other herbaceous vegetation and there is woody debris, leaf litter, or detritus present in the channel.
0.4	Channel supports at least 25% relative cover of grasses, forbs, or herbaceous or riparian vegetation and there is at least 10% relative cover of woody debris, leaf litter, or detritus in the channel.
0.6	Site contains between 25% and 50% relative cover of any stratum of riparian vegetation and between 10% and 40% relative cover with woody debris, leaf litter, or detritus.
0.8	Site contains between 50% and 75% relative cover of any stratum of riparian vegetation and between 40% and 60% relative cover with woody debris, leaf litter, or detritus.
1.0	Site contains greater than 75% relative cover of any stratum of riparian vegetation and greater than 60% relative cover with woody debris, leaf litter, or detritus.

Criteria for Southern Coast Live Oak Riparian Forest

Vegetation Community – Structural Diversity

Score	Evaluation Criteria
0	Site permanently converted to land use that will not be able to support native riparian vegetation, such as housing, agricultural, or concrete channel.
0.2	No existing riparian vegetation (e.g., covered with annual grasses and scrub, or bare ground). However, site has the potential for revegetation without extensive structural modification.
0.4	Vegetated areas of the site contain sparse, scattered, patchy, or remnant riparian vegetation that is immature and/or lacks structural (vertical) diversity.
0.6	The patches of riparian vegetation on the site contain riparian trees and saplings (i.e., perennial dicots), but contain no, or poorly-developed, shrub understory.
0.8	The patches of riparian vegetation on the site contain riparian trees and saplings plus a well-developed native shrub understory.
1.0	The patches on the site are structurally diverse. They contain riparian trees and saplings (for southern coast live oak riparian forest) and native seedlings, as well as developed native shrub understory and herbaceous wetlands.

Vegetation Community – Coverage and Spatial Diversity

Score	Evaluation Criteria
0	Site permanently converted to land use that will not be able to support native riparian vegetation, such as housing, agricultural, or concrete channel.
0.2	No existing riparian vegetation (e.g., covered with annual grasses and scrub, or bare ground). However, site has the potential for revegetation without extensive structural modification.
0.4	Patches of monotypic riparian vegetation covering up to 50% of the site, interspersed among grasses or bare ground.

0.6 Patches of diverse riparian vegetation covering up to 30% of the site, interspersed among grasses, exotic plants, or bare ground; AND/OR greater than 50% of the site covered with monotypic patch(es) of riparian vegetation, interspersed among grasses or bare ground.

0.8 Diverse riparian vegetation covering between 30% and 70% of the site (e.g., strips or islands of riparian vegetation communities, interspersed in open space).

1.0 Diverse riparian vegetation (e.g., at least three different genera of riparian vegetation present) covering between 70% and 100% of the site, interspersed in open space.

Biogeochemical Processes – Vegetation Roughness and Organic Carbon

Score	Evaluation Criteria
0	Channel is contained in a concrete-lined channel, culvert, etc., with little to no vegetation or detritus.
0.2	Site can support grasses, forbs, or other herbaceous vegetation and there is woody debris, leaf litter, or detritus present in the channel.
0.4	Site supports at least 25% relative cover of grasses, forbs, or herbaceous or riparian vegetation and there is at least 10% relative cover of woody debris, leaf litter, or detritus in the channel.
0.6	Site contains between 25% and 50% relative cover of any stratum of riparian vegetation and between 10% and 40% relative cover with woody debris, leaf litter, or detritus.
0.8	Site contains between 50% and 75% relative cover of any stratum of riparian vegetation and between 40% and 60% relative cover with woody debris, leaf litter, or detritus.
1.0	Site contains greater than 75% relative cover of any stratum of riparian vegetation and greater than 60% relative cover with woody debris, leaf litter, or detritus.

Percent Exotic, Invasive Vegetation

Score	Evaluation Criteria
0	Site is covered with pure stands of exotic vegetation or lacks any riparian vegetation.
0.2	Site is covered by 70% to 99% exotic vegetation.
0.4	Site is covered by 40% to 69% exotic vegetation.
0.6	Site is covered by 10% to 39% exotic vegetation.
0.8	Site is covered by 5% to 9% exotic vegetation.
1.0	Site is covered by less than 5% exotic vegetation.

Hydrologic Regime of Riparian Zone

Score	Evaluation Criteria
0	No regular supply of water to the site. Site not associated with any water source, surface drainage, impoundment, or groundwater discharge.
0.2	Water supply to the site is solely from artificial irrigation (e.g., sprinklers, drip irrigation). No natural surface drainage, natural impoundment, groundwater discharge, or other natural hydrologic regime.
0.5	Site is sustained by natural source of water, but is not associated with a stream, river, or other concentrated flow conduit. (For example, the site is sustained by groundwater or urban runoff.) There is no evidence of riparian processes, such as overbank flow, scouring, or deposition.
0.7	Site is within or adjacent to an impoundment on a natural water course that is subject to fluctuations in flow or hydroperiod.
1.0	Site is within or adjacent to a stream, river, or other concentrated flow conduit that provides the primary source of water to the site. This site contains some evidence of riparian processes, such as overbank flow, scouring, or deposition.

Criteria for River Wash

Micro- and Macro-Topographic Complexity

Score	Evaluation Criteria
0	Channel is contained in a concrete-lined channel, culvert, etc.
0.2	Flood-prone area is characterized by a homogeneous, flat earthen surface with little to no micro- and macro-topographic features.
0.5	Flood-prone area contains micro- and/or macro-topographic features such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, or hummocks, but is predominantly homogeneous or flat surfaced.
0.8	Floodplain is not predominantly homogeneous and is characterized by micro-topographic features such as pits, ponds, hummocks, bars. However, there are no macro-topographic features such as braiding, secondary channels, or backwaters.
1.0	Flood-prone area is characterized by micro- and macro-topographic complexity such as meanders, bars, braiding, secondary channels, backwaters, terraces, pits, ponds, hummocks, etc.

Percent Exotic, Invasive Vegetation

Score	Evaluation Criteria
0	Site is covered with pure stands of exotic vegetation or lacks any riparian vegetation.
0.2	Site is covered by 70% to 99% exotic vegetation.
0.4	Site is covered by 40% to 69% exotic vegetation.
0.6	Site is covered by 10% to 39% exotic vegetation.
0.8	Site is covered by 5% to 9% exotic vegetation.
1.0	Site is covered by less than 5% exotic vegetation.

7.7.1 FHA Success Criteria

At the end of each monitoring year, scores will be assigned to each vegetation community within the mitigation area using the evaluation criteria above. The interim and ultimate target scores are listed in *Table 15*. Interim and ultimate success will be determined as follows:

- Interim success of southern cottonwood–willow riparian forest, mulefat scrub, arrow weed scrub, and southern coast live oak riparian forest in the mitigation area = attainment of interim target score for Hydrologic Regime criterion AND attainment of interim target scores for four of the remaining five criteria.

- Ultimate success of southern cottonwood–willow riparian forest, mulefat scrub, arrow weed scrub, and southern coast live oak riparian forest in the mitigation areas = attainment of ultimate target score for Hydrologic Regime criterion AND attainment of ultimate target scores for four of the remaining five criteria.

- Interim success of river wash in the mitigation area = attainment of both interim target scores.

- Ultimate success of river wash in the mitigation areas = attainment of both ultimate target scores.

TABLE 15
FHA Goals for Success of Mitigation Areas

Evaluation Criteria	Interim Target Score (Years 1–3)	Ultimate Target Score (Years 4–5)
Southern Cottonwood–Willow Riparian Forest, Mulefat Scrub, Arrow Weed Scrub		
Structural diversity	0.4	0.8
Coverage and spatial diversity	0.6	1.0
Percent exotic, invasive vegetation	0.6	0.8
Hydrological regime of riparian zone	0.7	1.0
Topographic complexity	0.5	0.8
Biogeochemical processes	0.6	0.8
Southern Coast Live Oak Riparian Forest		
Structural diversity	0.4	0.8
Coverage and spatial diversity	0.6	1.0
Biogeochemical processes	0.6	1.0
Percent exotic, invasive vegetation	0.6	0.8
Hydrological regime of riparian zone	0.2	0.5
River Wash		
Topographic complexity	0.5	0.8
Percent exotic, invasive vegetation	0.6	0.8

8.0 REPORTING

8.1 Annual Monitoring Report

An annual monitoring report will be submitted to the permitting agencies during the 5-year maintenance and monitoring period of the project. The monitoring reports will describe the existing conditions of the project areas derived from qualitative field observations and quantitative vegetation data collection. The reports will provide a comparison of annual success criteria with field conditions, will identify all shortcomings of the project, project implementation, etc., and will recommend remedial measures necessary for the successful completion of the wetlands mitigation project. Each yearly report will provide a summary of the accumulated data. Annual reports also will include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities
- A copy of the resource agency permits, any special conditions, and any subsequent letters of modification
- Prints of biological monitoring photographs

- Maps identifying monitoring areas, planting zones, and weed-removal areas as appropriate
- Quantitative data from transect measurements in Years 1 through 5 of the mitigation project.

The annual monitoring report will be submitted to the resource agencies by April 1st of each year with the Annual Mitigation Status Report. The Annual Mitigation Status Report is required for projects installed under the Newhall Ranch Specific Plan Mitigation Measure 4.6-9 (County of Los Angeles 2003), and shall be submitted for 5 years after all mitigation has been completed.

8.2 Agency Notification at End of Monitoring Period

Upon submitting the annual report for the final year, Newhall Land will notify the permitting agencies that the final success criteria have been met at the end of the 5-year monitoring period, and request acceptance of the site, immediate release of any financial security posted for the project (letter of credit, bond, other), and confirmation that project mitigation has been satisfied. Early release may be possible if performance standards are met early and the resource agencies agree with the level of establishment. Removal of the irrigation system, temporary fencing, and signage would occur prior to final sign-off. In the event that Newhall Land gets no response from the permitting agencies within 60 days of submittal of the final report, Newhall Land will assume acceptance of the report. Newhall Land will then, at its option, formally notify the permitting agencies that the site has satisfied the agency permits and that no further maintenance or monitoring will be conducted, and Newhall Land may request immediate release of any financial securities held by any permitting agency for the project.

8.3 Regulatory Agency Confirmation

Following receipt of the notification of completion, CDFG, ACOE, and RWQCB may visit the site to confirm the completion of the mitigation effort and may issue formal letters of success prior to acceptance.

9.0 CONTINGENCY MEASURES

If performance criteria are not met for all or any portion of the mitigation project or if the final success criteria are not met, the project biologist and Newhall Land will prepare an analysis of the cause(s) of failure within the appropriate annual report and, if determined necessary by permitting agencies, propose remedial action for agency approval. If the mitigation site has not met the performance criteria by the end of the 5-year long-term maintenance and monitoring

period, Newhall Land's maintenance and monitoring obligations will continue until contingency measures are negotiated and implemented to bring the mitigation site into compliance with the established standards or until the permitting agencies grant final mitigation project permit compliance/approval.

In the event that the restoration, creation, or enhancement site is significantly damaged by an Act of God (fire, flood, landslide, or earthquake) or vandalism, then the following shall be used as guidance for the continuation of mitigation maintenance and monitoring:

- If in Years 1 through 2: replant once and restart 5-year maintenance and monitoring clock.
- If in Years 3 through 5:
  - and being documented as having satisfied the 3-year performance criteria, then the 5-year success criteria are suspended and the site is deemed to have satisfied permitting agency mitigation conditions. Weed control only shall be required for the time period of the original 5-year monitoring period.
  - and not documented as meeting 3-year performance criteria, then a one-time replant is required, as well as negotiation with permitting agencies, as suggested above, to determine the extent and duration of maintenance and monitoring.

9.1 Adaptive Management Plan

Adaptive management will be implemented in the event of unforeseen or probable but unpredictable circumstances. Adaptive management is defined, for the purposes of this mitigation project, as a flexible, iterative approach to the long-term management of biological resources that is directed over time by the results of ongoing monitoring activities and direct observation of environmental stressors that are producing adverse results within the mitigation area. Adaptive management will include the utilization of regular qualitative assessments and rapid qualitative assessment data gathered in the field prior to and during the mitigation project to assess the health and vigor of vegetation communities within the mitigation site. Following an event that causes damage to all or part of the mitigation site, the data will be used in part to drive management considerations for repair of the damaged areas. Achieving the key goals of mitigation completion and establishment of self-sustaining native vegetation communities will be the focus of all adaptive management decisions. Individual environmental stressors are discussed below, along with an anticipated range of management responses to correct any damage that may occur to the mitigation site. Enhancement of adjacent disturbed vegetation within the Santa Clara

River floodplain may be considered as an adaptive management measure in the event that certain vegetation communities are no longer supported at the project site.

9.1.1 Herbivory

Some grazing and browsing by native mammals is expected to occur within the mitigation area. The plant palettes for each vegetation community have been designed to accommodate a moderate level of plant browsing. If browse levels should become elevated (i.e., if significant plant mortality and cover reduction occurs) as indicated by qualitative or quantitative monitoring of the mitigation site, remedial measures will have to be implemented. Browse guards (fencing) may be installed around the base of trees and young shrub container plants in affected areas to reduce plant mortality.

9.1.2 Flooding

Flooding is anticipated to occur on occasion within the mitigation areas. Flooding may periodically reduce overall plant cover within the stream channel. If quarterly monitoring of the channel indicates that cover is being reduced below tolerable levels, remedial planting or seeding may be required. Additional mulch, cuttings, or container plants may be placed in strategic areas to address changed flow characteristics of the stream channel.

Due to the highly volatile nature of the Santa Clara River's flood regime, additional flow entrainment or velocity protection features may be recommended. In addition, vegetation communities with the lowest Manning's coefficient will be positioned in potential areas of highest flow rate in an attempt to reduce flood-related damage to the creation/restoration sites. In addition, larger tree trunks from clearing operations may be strategically placed to provide additional non-intrusive protection for mitigation areas, while also providing habitat for small mammals, reptiles, and other small wildlife.

9.1.3 Drought

Seasonal drought is a normal annual cycle in northern Los Angeles County and all plant palettes have been designed with drought-tolerant plant species that are capable of withstanding seasonal fluctuations in available moisture. However, an extended drought could potentially occur, including low seasonal rainfall and prolonged high temperatures that may negatively affect the mitigation site (e.g., lower native cover, higher plant mortality, or increased potential for pest infestations on site). Irrigation will reduce or eliminate the effects of drought on container plants and seedlings during the first 3 years of the mitigation project. Any remedial options that may be necessary after 2 years from the installation date will likely require an additional period of site

irrigation to relieve plants from drought stress and/or provide for new seed growth. All irrigation components may be left in place after Year 2 in case remedial seeding and/or container planting is required at a later project date. If the irrigation system is required at a later date, it should be used only as necessary (i.e., periodic watering versus regular daily watering).

10.0 REFERENCES

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APPENDIX A

Vascular Plant Species Observed at Newhall Ranch (2002, 2003, 2004, 2005, and 2006)

APPENDIX A
Vascular Plant Species Observed at Newhall Ranch (2002, 2003, 2004, 2005, and 2006)

LYCOPODIAE

SELAGINELLACEAE – SPIKE-MOSS FAMILY

Selaginella bigelovii – Bigelow's spike-moss

EQUISETAE

EQUISETACEAE – HORSETAIL FAMILY

Equisetum hyemale – common scouring-rush
Equisetum laevigatum – smooth scouring-rush
Equisetum telmateia – giant horsetail

FILACEAE

AZOLLACEAE – MOSQUITO FERN FAMILY

Azolla c.f. *filiculoides* – duckweed fern

DENNSTAEDTIACEAE – BRACKEN FAMILY

Adiantum jordanii – California maiden-hair
Pellaea andromedifolia – coffee fern
Pellaea mucronata var. *mucronata* – bird's-foot fern
Pentagramma triangularis – goldenback fern

DRYOPTERIDACEAE – WOOD FERN FAMILY

Dryopteris arguta – coastal wood fern

POLYPODIACEAE – POLYPODY FAMILY

Polypodium californicum – California polypody

CONIFERAE

CUPRESSACEAE – CYPRESS FAMILY

* *Cedrus deodara* – Deodar cedar
Juniperus californica – California juniper

PINACEAE – PINE FAMILY

* *Pinus halepensis* – Aleppo pine
* *Pinus pinea* – stone pine

ANGIOSPERMAE (DICOTYLEDONES)

AIZOACEAE – FIG-MARIGOLD FAMILY

* *Aptenia cordifolia* – baby sun-rose
* *Carpobrotus* sp. – sea-fig

AMARANTHACEAE – AMARANTH FAMILY

* *Amaranthus albus* – tumbleweed
Amaranthus blitoides – prostrate amaranth
* *Amaranthus hybridus* – amaranth
Amaranthus palmeri – Palmer's amaranth
Amaranthus powellii – Powell's amaranth
* *Amaranthus retroflexus* – rough pigweed

ANACARDIACEAE – SUMAC FAMILY

Malosma laurina – laurel sumac
Rhus ovata – sugar-bush
Rhus trilobata – squaw bush
* *Schinus molle* – Peruvian pepper-tree
Toxicodendron diversilobum – poison-oak

APIACEAE – CARROT FAMILY

* *Anethum graveolens* – dill
Apiastrum angustifolium – wild celery
* *Apium graveolens* – celery
Berula erecta – cutleaf water-parsnip
Bowlesia incana – American bowlesia
* *Conium maculatum* – poison hemlock
* *Coriandrum sativum* – cilantro
* *Daucus carota* – Queen Anne's lace
Daucus pusillus – rattlesnake weed
Lomatium utriculatum – common lomatium
Lomatium caruifolium – alkali parsnip
Sanicula bipinnata – poison sanicle
Osmorhiza brachypoda – California sweet-cicely

* *Petroselinum crispum* – parsley
Sanicula crassicaulis – Pacific sanicle
* *Torilis arvensis* – Japanese hedge-parsley
* *Torilis nodosa* – knot hedge-parsley
Yabea microcarpa – California hedge parsley

APOCYNACEAE – DOGBANE FAMILY
Apocynum cannabinum – Indian hemp
* *Vinca major* – periwinkle

ASCLEPIADACEAE – MILKWEED FAMILY
Asclepias californica – California milkweed
Asclepias fascicularis – narrow-leaf milkweed

ASTERACEAE – SUNFLOWER FAMILY
Achillea millefolium – yarrow
Achyrachaena mollis – blow-wives
Acourtia microcephala – sacapellote
Agoseris grandiflora – large-flowered agoseris
Agoseris retrorsa – spear-leaf agoseris
Ambrosia acanthicarpa – annual burweed
Ambrosia confertifolia – weak-leaved burweed
Ambrosia psilostachya – western ragweed
Artemisia californica – coastal sagebrush
Artemisia douglasiana – California mugwort
Artemisia dracunculus – tarragon
Artemisia tridentata – Great Basin sagebrush
Baccharis douglasii – marsh baccharis
Baccharis emoryi – Emory's baccharis
Baccharis pilularis – coyote brush
Baccharis salicifolia – mulefat
Baccharis sarothroides – chaparral broom
Brickellia californica – California brickellbush
Brickellia nevinii – Nevin's brickellbush
* *Carduus pycnocephalus* – Italian thistle
* *Centaurea melitensis* – star thistle
Chaenactis artemisiifolia – artemisia pincushion
Chaenactis glabriuscula – yellow pincushion
Chrysothamnus nauseosus – rubber rabbitbrush

Cirsium occidentale var. *californicum* – California thistle
Cirsium occidentale var. *occidentale* – cobwebby thistle
* *Cirsium vulgare* – bull thistle
* *Cnicus benedictus* – blessed thistle
Conyza canadensis – horseweed
Conyza coulteri – Coulter's conyza
Coreopsis bigelovii – Bigelow's coreopsis
* *Coreopsis tinctoria* – calliopsis
Corethrogyne filaginifolia – virgate cudweed aster
* *Cotula coronopifolia* – African brass-buttons
* *Cotula australis* – Australian brass-buttons
Deinandra increscens ssp. *increscens* – no common name
Encelia actoni – Acton's encelia
Encelia californica – California bush sunflower
Encelia farinosa – brittlebush, incensio
Ericameria palmeri var. *pachylepis* – goldenbush
Ericameria pinifolia – pine-bush
Erigeron foliosus – leafy daisy
Eriophyllum confertiflorum – long-stem golden yarrow
Euthamia occidentalis – western goldenrod
Filago californica – California fluffweed
* *Filago gallica* – narrow-leaf filago
* *Gazania linearis* – gazania
Gnaphalium bicolor – bicolor cudweed
Gnaphalium californicum – California everlasting
Gnaphalium canescens ssp. *microcephalum* – white everlasting
Gnaphalium leucocephalum – Sonora everlasting
Gnaphalium luteo-album – white cudweed
Gnaphalium sp. *nova* – everlasting
Gnaphalium palustre – lowland cudweed
Gnaphalium stramineum – cotton-batting plant
Grindelia sp. – gumplant
Hazardia squarrosa ssp. *grindelioides* – saw-toothed goldenbush
Helianthus annuus – common sunflower
Helianthus nuttallii c.f. ssp. *parishii* – Los Angeles sunflower
Hemizonia fasciculata – fascicled tarweed
Hemizonia kelloggii – Kellogg's tarweed
Heterotheca grandiflora – telegraph weed
Heterotheca sessiliflora – golden aster

Hypochaeris glabrata – smooth cat's ear
* *Hypochaeris radicata* – hairy cat's ear
Isocoma menziesii – goldenbush
Isocoma menziesii var. *menziesii* [*Haplopappus venetus*] – Menzies' goldenbush
Iva axillaris – poverty weed
* *Lactuca saligna* – willowleaf lettuce
* *Lactuca serriola* – prickly lettuce
Lagophylla ramosissima – common hareleaf
Lasthenia californica – coast goldfields
Layia glandulosa – white layia
Layia platyglossa – tidy tips
Lepidospartum squamatum – scale-broom
Lessingia filaginifolia – California aster
Lessingia glandulifera – lessingia
Madia exigua – small tarweed
Madia gracilis – slender madia
Malacothrix clevelandii – Cleveland's malacothrix
Malacothrix saxatilis – cliff malacothrix
* *Matricaria matricarioides* – pineapple weed
Micropus californicus – slender cottonweed
* *Picris echioides* – bristly ox-tongue
Pluchea odorata – marsh-fleabane
Pluchea sericea – arrow weed
Psilocarphus tenellus – slender woolly-heads
* *Pulicaria paludosa* – Spanish sunflower
Rafinesquia californica – California chicory
Senecio californicus – California butterweed
Senecio flaccidus var. *douglasii* – butterweed
* *Senecio vulgaris* – common groundsel
Silybum marianum – milk thistle
Solidago californica – California goldenrod
* *Sonchus asper* – prickly sow-thistle
* *Sonchus oleraceus* – common sow-thistle
* *Spartium junceum* – Spanish broom
Stebbinsoseris heterocarpa [*Microseris heterocarpa*] – brown puffs
Stephanomeria cichoriacea – chicory-leaved Stephanomeria
Stephanomeria exigua – small wreathplant
Stephanomeria pauciflora – wire-lettuce
Stephanomeria virgata – twiggy wreathplant

Stylocline gnaphaloides – everlasting nest-straw
Uropappus lindleyi [*Microseris lindleyi*] – silver puffs
Wyethia ovata – mule ears
Xanthium spinosum – spiny cocklebur
Xanthium strumarium – cocklebur

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia – white alder

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii var. *intermedia* – yellow fiddleneck
Amsinckia menziesii var. *menziesii* – yellow fiddleneck
Amsinckia tessellata – devil's lettuce
Cryptantha sp. – forget-me-not
Cryptantha decipiens – gravel cryptantha
Cryptantha intermedia – common forget-me-not
Cryptantha micrantha – redroot cryptantha
Cryptantha microstachys – Tejon cryptantha
Cryptantha muricata – prickly cryptantha
Heliotropium curassavicum – wild heliotrope
Pectocarya linearis – slender pectocarya
Pectocarya penicillata – pectocarya
Pectocarya setosa – pectocarya
Plagiobothrys arizonicus – popcorn flower
Plagiobothrys canescens – rusty popcorn flower
Plagiobothrys collinus – California popcorn flower
Plagiobothrys fulvus – common popcorn flower

BRASSICACEAE – MUSTARD FAMILY

Arabis sparsiflora – no common name
Athysanus pusillus – dwarf athysanus
* *Brassica nigra* – black mustard
* *Capsella bursa-pastoris* – shepherd's purse
Caulanthus lasiophyllus – California mustard
Descurainia pinnata ssp. *halictorum* – tansy mustard
Erysimum capitatum – wall flower
* *Hirschfeldia incana* – short-podded mustard
Lepidium lasiocarpum – peppergrass
* *Lepidium latifolium* – peppergrass

Lepidium oblongum – peppergrass
Lepidium virginicum – wild peppergrass
* *Lobularia maritime* – sweet-alyssum
* *Raphanus sativus* – wild radish
* *Rorippa nasturtium-aquaticum* – water cress
* *Sisymbrium altissimum* – tumble mustard
* *Sisymbrium irio* – London rocket
* *Sisymbrium officinale* – hedge mustard
* *Sisymbrium orientale* – oriental mustard
Stanleya pinnata var. *pinnata* – Prince's plume
Thysanocarpus curvipes – fringepod
Thysanocarpus laciniatus – lacepod
Tropidocarpum gracile – slender dobie-pod

CACTACEAE – CACTUS FAMILY
* *Cereus peruvianus* – Peruvian apple cactus
Opuntia basilaris var. *ramosa* – beaver-tail cactus
Opuntia californica var. *parkeri* – cane cholla
Opuntia littoralis – coastal prickly-pear
Opuntia × *vaseyi* – prickly-pear cactus
* *Trichocereus spachianus* – golden torch cactus

CAMPANULACEAE – BELLFLOWER FAMILY
Nemacladus ramosissimus – Nuttall's threadplant

CAPPARACEAE – CAPER FAMILY
Isomeris arborea – bladderpod

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY
Lonicera interrupta – chaparral honeysuckle
Lonicera subspicata – southern honeysuckle
Sambucus mexicana – Mexican elderberry
Symphoricarpos sp. – snowberry
Symphoricarpos c.f. *mollis* – spreading snowberry

CARYOPHYLLACEAE – PINK FAMILY
* *Cerastium glomeratum* – sticky mouse-ear
* *Herniaria hirsuta* ssp. *cinerea* – gray herniaria
Loeflingia squarrosa – no common name
* *Silene gallica* – common catchfly

Spergularia sp. – stickwort, starwort
* *Spergularia rubra* – sand-spurrey
* *Spergularia* c.f. *villosa* – villous sand-spurrey
* *Stellaria media* – common chickweed
Stellaria nitens – shining chickweed

CASUARINACEAE – SHEET OAK FAMILY
* *Casuarina cunninghamiana* – Australian pine

CHENOPODIACEAE – GOOSEFOOT FAMILY
Atriplex canescens – four-winged saltbush
* *Atriplex heterosperma* – weedy orache
Atriplex lentiformis – big saltbush, quail brush
* *Atriplex rosea* – tumbling oracle
* *Atriplex semibaccata* – Australian saltbush
Atriplex serenana var. *serenana* – bractscale
Atriplex suberecta – Australian saltbush
Atriplex triangularis – spearscale
* *Bassia hyssopifolia* – five-hooked bassia
* *Beta vulgaris* – garden beet
* *Chenopodium album* – lamb's-quarters
* *Chenopodium ambrosioides* – Mexican tea
Chenopodium berlandieri – pitseed goosefoot
* *Chenopodium botrys* – goosefoot
Chenopodium californicum – California goosefoot
* *Chenopodium murale* – nettle-leaved goosefoot
Chenopodium rubrum – red goosefoot
* *Salsola tragus* – Russian-thistle
* *Spinacia oleracea* – spinach

CONVOLVULACEAE – MORNING-GLORY FAMILY
Calystegia macrostegia ssp. *cyclostegia* – morning-glory
Calystegia peirsonii – Peirson's morning-glory
* *Convolvulus arvensis* – bindweed

CRASSULACEAE – STONECROP FAMILY
Crassula connata – dwarf stonecrop
Dudleya cymosa – unidentified dudleya
Dudleya lanceolata – lanceleaf dudleya

CUCURBITACEAE – GOURD FAMILY

Cucurbita foetidissima – coyote-melon, calabazilla
Marah fabaceus – California manroot
Marah macrocarpus – wild cucumber

CUSCUTACEAE – DODDER FAMILY

Cuscuta californica – California dodder
Cuscuta pentagona – five-angled dodder
Cuscuta subinclusa – canyon dodder

DATISCACEAE – DATISCA FAMILY

Datisca glomerata – Durango root

ERICACEAE – HEATH FAMILY

Arctostaphylos glandulosa ssp. *mollis* – manzanita
Arctostaphylos glauca – bigberry manzanita

EUPHORBIACEAE – SPURGE FAMILY

Chamaesyce albomarginata – rattlesnake spurge
* *Chamaesyce maculata* – spotted spurge
Chamaesyce polycarpa – small-seed sand mat
Chamaesyce serpyllifolia – thyme-leafed spurge
Croton californicus – California croton
Eremocarpus setigerus – doveweed
Euphorbia spathulata – reticulate-seed spurge
* *Ricinus communis* – castor-bean
Stillingia linearifolia – linear-leaved stillingia

FABACEAE – PEA FAMILY

Amorpha californica var. *californica* – false indigo
* *Acacia baileyana* – golden wattle
Astragalus didymocarpus – white dwarf locoweed
Astragalus gambelianus – Gambel's locoweed
Astragalus trichopodus – Santa Barbara locoweed
Glycyrrhiza lepidota – wild licorice
Lathyrus laetiflorus – wild sweet pea
Lathyrus vestitus – wild pea
Lotus corniculatus – bird's-foot lotus
Lotus hamatus – grab lotus
Lotus humistratus – lotus

Lotus purshianus – Spanish-clover
Lotus salsuginosus – coastal lotus
Lotus scoparius var. *scoparius* – deerweed
Lotus strigosus – strigose deerweed
Lupinus bicolor – Lindley's annual lupine
Lupinus excubitus – Mountain Springs bush lupine
Lupinus excubitus var. *excubitus* – grape soda lupine
Lupinus excubitus var. *hallii* – grape soda lupine
Lupinus hirsutissimus – stinging lupine
Lupinus microcarpus var. *densiflorus* – chick lupine
Lupinus microcarpus var. *microcarpus* – chick lupine
Lupinus sparsiflorus – Coulter's lupine
Lupinus succulentus – arroyo lupine
Lupinus truncatus – collar lupine
* *Medicago polymorpha* – California burclover
* *Medicago polymorpha* var. *brevispina* – short-spined California burclover
* *Medicago sativa* – alfalfa
* *Melilotus alba* – white sweet-clover
* *Melilotus indica* – yellow sweet-clover
* *Robinia pseudoacacia* – black locust
Trifolium sp. – clover
Trifolium albopurpureum – rancheria clover
Trifolium ciliolatum – tree clover
* *Trifolium fragiferum* – strawberry clover
Trifolium fucatum – bull clover
Trifolium gracilentum – pin-point clover
* *Trifolium hirtum* – rose clover
Trifolium microcephalum – maiden clover
* *Trifolium repens* – white clover
Trifolium willdenovii – valley clover
Vicia americana – American vetch
Vicia exigua – slender vetch
Vicia hassei – Hesse's vetch
* *Vicia villosa* ssp. *villosa* – winter vetch

FAGACEAE – BEECH FAMILY

Quercus agrifolia – coast live oak
Quercus berberidifolia – scrub oak
Quercus chrysolepis – canyon live oak

Quercus douglasii × *lobata* – oak
Quercus douglasii – blue oak
Quercus lobata – valley oak

GERANIACEAE – GERANIUM FAMILY

* *Erodium brachycarpum* – shortfruit stork's bill
* *Erodium botrys* – long-beaked filaree
* *Erodium cicutarium* – red-stemmed filaree
* *Erodium moschatum* – white-stemmed filaree

GROSSULARIACEAE – CURRANT FAMILY

Ribes aureum – golden currant
Ribes californicum – California gooseberry
Ribes malvaceum – chaparral currant

HYDROPHYLLACEAE – WATERLEAF FAMILY

Emmenanthe penduliflora – whispering bells
Eriodictyon crassifolium var. *nigrescens* – yerba santa
Eucrypta chrysanthemifolia – common eucrypta
Nemophila menziesii – baby blue-eyes
Nemophila parviflora var. *quercifolia* – oak-leaved nemophila
Nemophila pedunculata – littlefoot nemophila
Phacelia cicutaria – caterpillar phacelia
Phacelia cicutaria var. *hispida* – caterpillar phacelia
Phacelia cicutaria var. *hubbyi* – caterpillar scorpionweed
Phacelia distans – blue fiddleneck
Phacelia imbricata ssp. *imbricata* – imbricate phacelia
Phacelia minor – wild Canterbury-bell
Phacelia ramosissima – shrubby phacelia
Phacelia viscida – sticky phacelia
Pholistoma auritum – fiesta flower

JUGLANDACEAE – WALNUT FAMILY

Juglans californica – Southern California black walnut

LAMIACEAE – MINT FAMILY

* *Lamium amplexicaule* – henbit
* *Marrubium vulgare* – horehound
Mentha citrata – orange mint
Monardella lanceolata – mustang mint

Salvia apiana – white sage
Salvia × *bernardina* – no common name
Salvia columbariae – chia
Salvia leucophylla – purple sage
Salvia mellifera – black sage
Scutellaria tuberosa – Danny's skullcap
Stachys ajugoides – bugle hedge-nettle
Stachys ajugoides var. *rigida* – rigid hedge-nettle
Stachys albens – white hedge-nettle
Trichostema lanatum – woolly bluecurls
Trichostema lanceolatum – vinegar weed

LAURACEAE – LAUREL FAMILY

Umbellularia californica – California laurel

LOASACEAE – STICK-LEAF FAMILY

Mentzelia sp. – blazing star
Mentzelia laevicaulis – blazing star
Mentzelia micrantha – small-flowered stick-leaf

LYTHRACEAE – LOOSESTRIFE FAMILY

Lythrum californicum – California loosestrife

MALVACEAE – MALLOW FAMILY

Malacothamnus fasciculatus ssp. *laxiflorus* – chaparral bush mallow
Malacothamnus fremontii – bush mallow
Malacothamnus marrubioides – bush mallow
* *Malva neglecta* – common mallow
* *Malva parviflora* – cheeseweed

MELIACEAE – MAHOGANY FAMILY

* *Melia azedarach* – Chinaberry

MORACEAE – FIG FAMILY

* *Ficus carica* – edible fig

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus* sp. – eucalyptus
* *Eucalyptus camaldulensis* – red gum
* *Eucalyptus globulus* – blue gum

* *Eucalyptus leucoxylon* – white ironbark
* *Eucalyptus polyanthemos* – silver dollar gum
* *Eucalyptus sideroxylon* – red ironbark

NYCTAGINACEAE – FOUR O'CLOCK FAMILY

Mirabilis laevis var. *crassifolia* [*M. californica*] – California wishbone-bush

OLEACEAE – OLIVE FAMILY

Fraxinus dipetala – California ash
* *Fraxinus uhdei* – tropical ash
Fraxinus velutina – velvet ash
* *Ligustrum lucidum* – glossy privet
* *Olea europaea* – mission olive

ONAGRACEAE – EVENING-PRIMROSE FAMILY

Camissonia bistorta – southern sun cup
Camissonia bistorta × *hirtella* – sun cup
Camissonia boothii – sun cup
Camissonia boothii ssp. *decorticans* – shredding evening primrose
Camissonia californica – mustard primrose
Camissonia hirtella – sun cup
Camissonia micrantha – miniature sun cup
Camissonia strigulosa – sun cup
Clarkia cylindrical – speckled clarkia
Clarkia purpurea – winecup clarkia
Clarkia speciosa – clarkia
Clarkia unguiculata – elegant clarkia
Epilobium brachycarpum – willow herb
Epilobium canum ssp. *canum* – California fuchsia
Epilobium ciliatum – California cottonweed
Ludwigia peploides – yellow waterweed
Ludwigia repens – water primrose
Oenothera elata – evening primrose
* *Oenothera laciniata* – evening primrose

OROBANCHACEAE – BROOM-RAPE FAMILY

Orobanche fasciculata – clustered broom-rape
Orobanche parishii ssp. *parishii* – broom-rape
Orobanche sp. – broom-rape

PAEONIACEAE – PEONY FAMILY

Paeonia californica – California peony

PAPAVERACEAE – POPPY FAMILY

Argemone corymbosa – prickly poppy
Dendromecon rigida – tree poppy
Dicentra chrysantha – golden ear-drops
Dicentra ochroleuca – yellow bleeding heart
Eschscholzia californica – California poppy
Meconella denticulata – small-flower meconella
Papaver californicum – fire poppy
Platystemon californicus – California creamcups

PLANTAGINACEAE – PLANTAIN FAMILY

Plantago erecta – dot-seed plantain
* *Plantago indica* – plantain
* *Plantago lanceolata* – English plantain
* *Plantago major* – common plantain
Plantago c.f. *ovata* – woolly plantain

PLATANACEAE – SYCAMORE FAMILY

Platanus racemosa – western sycamore

POLEMONIACEAE – PHLOX FAMILY

Allophyllum divaricatum – purple false gillyflower
Allophyllum glutinosum – sticky false gillyflower
Eriastrum densifolium – woollystar
Eriastrum densifolium ssp. *densifolium* – woollystar
Eriastrum densifolium ssp. *elongatum* – elongate eriastrum
Eriastrum densifolium ssp. *mohavense* – Mohave eriastrum
Eriastrum sapphirinum – sapphire eriastrum
Gilia angelensis – angel gilia
Gilia capitata – globe gilia
Gilia splendens – splendid gilia
Leptodactylon californicum – prickly phlox
Linanthus androsaceus – common linanthus
Linanthus pygmaeus – linanthus
Navarretia atractyloides – holly-leaf skunkweed
Phlox gracilis – slender phlox

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe fimbriata – fringed spineflower
Chorizanthe parryi var. *fernandina* – San Fernando Valley spineflower
Chorizanthe staticoides – turkish rugging
Eriogonum angulosum – angle-stem buckwheat
Eriogonum baileyi – Bailey's buckwheat
Eriogonum brachyanthum – short-flowered buckwheat
Eriogonum elongatum – long-stemmed buckwheat
Eriogonum fasciculatum ssp. *foliolosum* – California buckwheat
Eriogonum fasciculatum ssp. *polifolium* – California buckwheat
Eriogonum gracile var. *gracile* – slender woolly buckwheat
Eriogonum gracillimum – rose and white buckwheat
Eriogonum maculatum – spotted buckwheat
Eriogonum nudum – naked buckwheat
Eriogonum c.f. *viridescens* – buckwheat
Lastarriaea coriacea – lastarriaea
* *Polygonum arenastrum* – common knotweed
* *Polygonum argyrocoleon* – smartweed
Polygonum lapathifolium – willow weed
Polygonum punctatum – perennial smartweed
Pterostegia drymarioides – granny's hairnet
* *Rumex conglomeratus* – whorled dock
* *Rumex crispus* – curly dock
Rumex hymenosepalus – wild rhubarb
Rumex maritimus – golden dock
Rumex obtusifolius – dock
Rumex salicifolius – willow dock

PORTULACACEAE – PURSLANE FAMILY

Calandrinia ciliata – redmaids
Calyptridium sp. – pussypaws
Claytonia parviflora – small-leaved montia
Claytonia perfoliata – miner's lettuce
* *Portulaca oleracea* – common purslane

PRIMULACEAE – PRIMROSE FAMILY

* *Anagallis arvensis* – scarlet pimpernel

RANUNCULACEAE – BUTTERCUP FAMILY

Clematis ligusticifolia – yerba de chiva
Clematis pauciflora – ropevine
Delphinium cardinale – scarlet larkspur
Delphinium parryi ssp. *parryi* – Parry's larkspur

RHAMNACEAE – BUCKTHORN FAMILY

Ceanothus crassifolius – hoary-leaved ceanothus
Ceanothus foliosus – southern blue lilac
Ceanothus leucodermis – white-bark ceanothus
Ceanothus tomentosus – woolyleaf ceanothus
Rhamnus crocea – redberry
Rhamnus ilicifolia – holly-leaf redberry

ROSACEAE – ROSE FAMILY

Adenostoma fasciculatum – chamise
Cercocarpus betuloides – mountain-mahogany
Cercocarpus betuloides var. *betuloides* – birch-leaf mountain-mahogany
Cercocarpus betuloides var. *blancheae* – island mountain-mahogany
Heteromeles arbutifolia – toyon
Prunus ilicifolia – holly-leaf cherry
Prunus virginiana var. *demissa* – western choke-cherry
Rosa californica – California rose
Rubus ursinus – California blackberry
* *Sanguisorba minor* – garden burnet

RUBIACEAE – MADDER FAMILY

Galium angustifolium – narrow-leaved bedstraw
* *Galium aparine* – goose grass
Galium nuttallii ssp. *nuttallii* – San Diego bedstraw
Galium porrigens – climbing bedstraw

SALICACEAE – WILLOW FAMILY

Populus fremontii – Fremont cottonwood
Populus tremuloides – quaking aspen
Salix exigua – narrow-leaved willow
Salix gooddingii – black willow
Salix laevigata – red willow
Salix lasiolepis – arroyo willow
Salix lucida ssp. *lasiandra* – golden willow

SAURURACEAE – LIZARD'S-TAIL FAMILY

Anemopsis californica – yerba mansa

SAXIFRAGACEAE – SAXIFRAGE FAMILY

Lithophragma bolanderi – Bolander's woodland star
Saxifraga californica – California saxifrage

SCROPHULARIACEAE – FIGWORT FAMILY

Antirrhinum coulterianum – white snapdragon
Antirrhinum multiflorum – withered snapdragon
Castilleja affinis – coast paintbrush
Castilleja densiflora – dense-flowered owl's-clover
Castilleja exserta – common owl's-clover
Castilleja foliolosa – woolly Indian paintbrush
Collinsia heterophylla – purple Chinese houses
Collinsia parviflora – maiden blue eyed Mary
Cordylanthus rigidus – bird's beak
Keckiella cordifolia – heart-leaf penstemon
Linaria canadensis – toadflax
Mimulus aurantiacus – bush monkeyflower
Mimulus aurantiacus var. *pubescens* – bush monkeyflower
Mimulus brevipes – yellow monkeyflower
Mimulus guttatus – seep monkeyflower
Mimulus pilosus – downy monkeyflower
Penstemon centranthifolius – scarlet bugler
Scrophularia californica – California figwort
* *Verbascum thapsus* – woolly mullein
* *Verbascum virgatum* – wand mullein
* *Veronica anagallis-aquatica* – water speedwell
* *Veronica persica* – Persian speedwell

SIMAROUBACEAE – QUASSIA FAMILY

* *Ailanthus altissima* – tree of heaven

SOLANACEAE – NIGHTSHADE FAMILY

Datura wrightii – western jimsonweed
* *Nicotiana glauca* – tree tobacco
Nicotiana quadrivalvis – Indian tobacco
* *Solanum americanum* – small-flowered nightshade
Solanum douglasii – white nightshade

* *Solanum elaeagnifolium* – silver leaf horse-nettle
* *Solanum sarrachoides* – hairy nightshade
Solanum xanti – chaparral nightshade

TAMARICACEAE – TAMARISK FAMILY
* *Tamarix* sp. – tamarisk
* *Tamarix ramosissima* – tamarisk

ULMACEAE – ELM FAMILY
* *Ulmus pumila* – Siberian elm

URTICACEAE – NETTLE FAMILY
Hesperocnide tenella – western nettle
Parietaria hespera – western pellitory
Urtica dioica – giant creek nettle
* *Urtica urens* – dwarf nettle

VERBENACEAE – VERVAIN FAMILY
Verbena lasiostachys – western verbena

VIOLACEAE – VIOLET FAMILY
Viola pedunculata – Johnny jump-ups

VISCACEAE – MISTLETOE FAMILY
Phoradendron macrophyllum – big leaf mistletoe
Phoradendron villosum – oak mistletoe

VITACEAE – GRAPE FAMILY
Parthenocissus vitacea – woodbine, Virginia creeper
Vitis girdiana – desert wild grape

ZYGOPHYLLACEAE – CALTROP FAMILY
* *Tribulus terrestris* – puncture vine

ANGIOSPERMAE (MONOCOTYLEDONES)

ARECACEAE – PALM FAMILY
* *Washingtonia robusta* – Mexican fan palm

CYPERACEAE – SEDGE FAMILY

Carex alma – sturdy sedge
Carex praegracilis – clustered field sedge
Carex sp. – sedge
Cyperus eragrostis – tall cyperus
Cyperus esculentus – yellow nut-grass
* *Cyperus involucratus* – nutsedge
Cyperus odoratus – coarse cyperus
Eleocharis montevidensis – slender creeping spike-rush
Eleocharis parishii – Parish's spikerush
Eleocharis rostellata – beaked spikerush
Scirpus acutus – hard-stemmed bulrush
Scirpus americanus – winged three-square
Scirpus maritimus – alkali bulrush
Scirpus microcarpus – bulrush
Scirpus robustus – Pacific coast bulrush

IRIDACEAE – IRIS FAMILY

Sisyrinchium bellum – blue-eyed grass

JUNCACEAE – RUSH FAMILY

Juncus sp. – rush
Juncus acutus ssp. *leopoldii* – southwestern spiny rush
Juncus balticus – wire rush
Juncus bufonius – toad rush
Juncus longistylis – rush
Juncus mexicanus – Mexican rush
Juncus rugulosus – wrinkled rush
Juncus textilis – Indian rush
Juncus torreyi – rush
Juncus triformis – Yosemite dwarf rush
Juncus xiphioides – iris-leaved rush

LEMNACEAE – DUCKWEED FAMILY

Lemna minuscula – duckweed
Lemna valdiviana – duckweed

LILIACEAE – LILY FAMILY

* *Allium cepa* – onion
Allium porrum – leek

* *Amaryllis belladonna* – naked lady
* *Asparagus officinalis* – asparagus
Bloomeria crocea – common goldenstar
Brodiaea terrestris ssp. *kernensis* – dwarf brodiaea
Calochortus clavatus var. *gracilis* – slender mariposa lily
Calochortus venustus – mariposa lily
Calochortus weedii var. *vestus* – late-flowered mariposa lily
Chlorogalum pomeridianum – soap plant
Dichelostemma capitatum – blue dicks
Muilla maritima – common muilla
Yucca whipplei – Our Lord's candle
Yucca schidigera – Mojave yucca

POACEAE – GRASS FAMILY

Achnatherum coronatum – giant needlegrass
* *Agrostis* sp. – bentgrass
* *Agrostis viridis* – water bent
Aristida adscensionis – six-weeks three-awn
* *Arundo donax* – giant reed
* *Avena barbata* – slender oat
* *Avena fatua* – wild oat
Avena sativa – cultivated oat
* *Bromus arenarius* – Australian brome
Bromus carinatus – California brome
Bromus catharticus – California brome
Bromus catharticus var. *catharticus* – California brome
* *Bromus diandrus* – ripgut grass
Bromus grandis – tall brome
* *Bromus hordeaceus* – soft chess
* *Bromus madritensis* ssp. *rubens* – foxtail chess
* *Bromus sterilis* – sterile brome
* *Bromus tectorum* – cheat grass
* *Cortaderia jubata* – pampas grass
* *Crypsis schoenoides* – prickle grass
* *Cynodon dactylon* – Bermuda grass
* *Digitaria sanguinalis* – hairy crabgrass
Distichlis spicata – salt grass
* *Echinochloa colonum* – jungle-rice
Echinochloa crus-galli – barnyard grass

* *Eleusine indica* – goose grass
Elymus elymoides – bottlebrush squirreltail
Elymus glaucus – western wild-rye
Elymus multisetus – big squirreltail
Eragrostis mexicana – lovegrass
* *Festuca arundinacea* – tall fescue
* *Hordeum marinum* – Mediterranean barley
* *Hordeum murinum* – glaucous foxtail barley
Koeleria macrantha – Junegrass
* *Lamarckia aurea* – goldentop
* *Leptochloa uninervia* – Mexican sprangletop
Leymus condensatus – giant ryegrass
Leymus triticoides – beardless wild rye
* *Lolium multiflorum* – Italian ryegrass
* *Lolium perenne* – perennial ryegrass
* *Lolium temulentum* – darnel
Melica imperfecta – California melic
Muhlenbergia asperifolia – scratch-grass
Muhlenbergia microsperma – littleseed muhly
Nassella cernua – nodding needlegrass
Nassella lepida – foothill needlegrass
Nassella pulchra – purple needlegrass
Panicum capillare – western witchgrass
* *Panicum miliaceum* – broom corn millet
* *Parapholis incurva* – sickle grass
Paspalum distichum – knotgrass
* *Phalaris aquatica* – Harding grass
* *Phalaris minor* – Mediterranean canary grass
* *Piptatherum miliaceum* – smilo grass
* *Poa annua* – annual bluegrass
Poa secunda – Malpais bluegrass
* *Polypogon interruptus* – ditch beard grass
* *Polypogon monspeliensis* – rabbit's-foot grass
Schismus barbatus – abumashi
Sorghum bicolor – sorghum
Sorghum halepense – Johnsongrass
Sporobolus airoides – alkali scation
* *Triticum aestivum* – cultivated wheat
Vulpia microstachys – fescue

* *Vulpia myuros* – rattail fescue
Vulpia octoflora – six-weeks fescue

POTAMOGETONACEAE – PONDWEED FAMILY
Potamogeton foliosus – leafy pondweed

TYPHACEAE – CATTAIL FAMILY
Typha angustifolia – narrow leaved cattail
Typha domingensis – slender cattail
Typha latifolia – broad-leaved cattail

* signifies introduced (non-native) species

DRAFT CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

APPLICANT:
NEWHALL LAND AND FARMING COMPANY
NEWHALL RANCH RESOURCE MANAGEMENT AND DEVELOPMENT PLAN

I. Introduction

The following evaluation is prepared in accordance with Section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500) as amended by the Clean Water Act of 1977 (Public Law 95-217). The intent of this document is to state and evaluate information regarding the effects of the discharge of dredged or fill material into waters of the United States. As a result, this analysis is not meant to stand-alone and relies heavily upon information provided in the Draft and Final Environmental Impact Statement/Environmental Impact Report for the Newhall Ranch Resource Management and Development Plan (RMDP) and Spineflower Conservation Plan (SCP) as well as the attached Draft Section 404(b)(1) Alternatives Analysis that was prepared by the applicant. The proposed project is to permanently discharge fill material into approximately 93.3 acres and temporarily impact 33.3 acres of waters of the United States for the construction and maintenance of flood control facilities, roads, utilities, infrastructure and other components associated with the proposed Newhall Ranch Resource Management and Development Plan near the city of Santa Clarita, Los Angeles County, California.

II. Project Description

A. Location

The 12,000-acre site encompasses approximately 5.5 linear miles of the Santa Clara River and several side drainages near Santa Clarita, northwestern Los Angeles County, California (at: lat:34-24-5.0040 lon:118-37-46.9920).

B. General Description

The proposed RMDP component of the Newhall Ranch Specific Plan would facilitate a broad range of residential, mixed-use, commercial and industrial land uses, various public facilities, and public services and utilities, together with preservation of large tracts of open space. At build-out, the proposed project would result in approximately 2,550 acres of residential uses (9,081 single-family homes on 1,559 acres, and 11,804 multi-family homes on 991 acres), 5.5 million square feet of commercial uses on 258 acres; and the development of approximately 643 acres devoted to public facilities such as community parks, neighborhood parks, golf course, community lake, new elementary, junior high and high schools, library, electrical substation, fire stations, and a 6.8 million gallon per day water reclamation plant (WRP). Open space would be provided on approximately 8,683 acres on the project site, and an additional 1,517 acres of open space in the Salt Creek area adjacent to the project area (for a total of about 10,200 acres of open space within the project site including the Salt Creek preservation

protected would increase from 13.88 acres under the proposed project to 13.97 acres, while the area of impacted occupied habitat would be decreased from 6.36 acres to 5.87 acres. Therefore, the modified version of Alternative 3 incorporates a spineflower preserve design (based on previous input received from CDFG), but no final permitting decision has been made regarding spineflower, because the SCP is not under the direct jurisdiction of the Corps'. In addition, the modified version of Alternative 3 does not involve areas outside of the project site, which is exclusive to the SCP and CDFG's spineflower permitting actions, specifically in Entrada and the Valencia Commerce Center.

The Draft EIS/EIR evaluated a range of alternatives to the proposed project, including Alternative 3 (Elimination of Planned Potrero Bridge and Additional Spineflower Preserves), which considered the development of 20,433 dwelling units and 5.48 msf of commercial square feet on the project site. With these development characteristics, Alternative 3 is similar to the overall development characteristics of the Modified Alternative 3. The modified version of Alternative 3 would provide 621 fewer residential units than Alternative 3 and result in a 0.07 msf reduction in commercial square footage. Under the modified version of Alternative 3 the floodplain area for the 100-year return event would be increased by 12.8 acres, resulting in a 100-year floodplain area of 1,296.7 acres within the project area. This increase would constitute a one percent reduction in impact compared to the proposed project. Even with this reduction, impacts under the Modified Alternative 3 on surface water hydrology and flood control would be substantially similar to those of the proposed project (Alternative 2). The Modified Alternative 3 would preserve 131,769 lf of on-site drainages, which is 54 percent of the total 242,049 lf of jurisdictional drainages on the project site. In total, the modified version of Alternative 3 would modify 54,001 feet of on-site tributaries; convert 56,291 lf of tributary channel to buried storm drain; install 69,913 lf of bank stabilization; and provide three bridges and 13 culvert tributary road crossings and would result in substantially similar impacts to Alternative 3. Impacts to water quality resulting from development with implementation of the Modified Alternative 3 would be generally similar to the impacts identified for the proposed project and Alternative 3, and would be reduced to a less-than-significant level with implementation of identified project design features, regulatory requirements, and mitigation measures. In general, the direct and indirect impacts associated with the modified version of Alternative 3 would be substantially similar to Alternative 3, but slightly

reduced. For detailed information concerning the direct and indirect impacts of the modified version of Alternative 3, please reference revised **Section 5.0** of the Final EIS/EIR and the attached Draft Section 404(b)(1) Alternatives Analysis prepared by the applicant.

Implementation of the Modified Alternative 3 would result in the placement of fill material within waters of the United States. In total, this alternative would permanently fill approximately 66.3 acres of waters of the United States (29 percent reduction in acreage compared to the proposed project), and would temporarily disturb 32.2 acres (3 percent decrease in acreage compared to the proposed project). The modified version of Alternative 3 would avoid 561.5 acres of waters of the United States within the project site. Of the total 660.1 acres of waters of the United States that occur on the site, the modified version of Alternative 3 would avoid approximately 85 percent, compared to 80 percent avoidance for the proposed project. Implementation of the Modified Alternative 3 would permanently disturb 7.7 acres of wetlands (62 percent reduction in impact acreage compared to the proposed project), and would temporarily disturb 11.4 acres of wetlands (2 percent decrease in impact acreage compared to the proposed project). Under the modified version of Alternative 3, there would be 4.5 acres of permanent impact and 14.6 acres of temporary impact to waters of the United States in the main stem of the Santa Clara River. In all the tributaries in the project area, the modified version of Alternative 3 would result in 61.8 acres of permanent impact and 17.6 acres of temporary impact in waters of the United States. In addition, a 19-acre wetland mitigation area could be implemented in lower Potrero Canyon, contiguous with the lower mesic meadow (cismontane alkali marsh) wetland preservation area. In total, the Modified Alternative 3 would avoid approximately 93 percent of all wetlands on site, a 4 percent increase in wetland avoidance compared to the proposed project. Based on a detailed review of the Modified Alternative 3 and the attached applicant prepared Draft Section 404(b)(1) Alternatives Analysis, it would meet the overall project purpose and would be practicable in light of costs, logistics and technology. Because the Modified Alternative 3 would substantially reduce impacts to waters of the United States when compared to Alternative 2, this alternative could potentially represent the least environmentally damaging practicable alternative.

Conclusion: Evaluation of the proposed project and alternatives in light of practicability and the overall project purpose (development of a master planned community with interrelated

Moilanen - Restoration Ecology, How Much Compensation is Enough? A Framework for Incorporating Uncertainty and Time Discounting When Calculating Offset Ratios for Impacted Habitat

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How Much Compensation is Enough? A Framework for Incorporating Uncertainty and Time Discounting When Calculating Offset Ratios for Impacted Habitat

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Keywords: habitat banking; habitat equivalency analysis; information-gap decision theory; mitigation; no net loss principle; offsets; strong sustainability; time discounting; uncertainty analysis

Abstract

Jump to…

Biodiversity offset areas may compensate for ecological damage caused by human activity elsewhere. One way of determining the offset ratio, or the compensation area needed, is to divide the present conservation value of the development site by the predicted future conservation value of a compensation area of the same size. Matching mean expected utility in this way is deficient because it ignores uncertainty and time lags in the growth of conservation value in compensation areas. Instead, we propose an uncertainty analytic framework for calculating what we call robustly fair offset ratios, which guarantee a high enough probability of the exchange producing at least as much conservation value in the offset areas than is lost from the development site. In particular, we analyze how the fair offset ratio is influenced by uncertainty in the effectiveness of restoration action, correlation between success of different compensation areas, and time discounting. We find that very high offset ratios may be needed to guarantee a robustly fair exchange, compared to simply matching mean expected utilities. These results demonstrate that considerations of uncertainty, correlated success/failure, and time discounting should be included in the determination of the offset ratio to avoid a significant risk that the exchange is unfavorable for conservation in the long run. This is essential because the immediate loss is certain, whereas future gain is uncertain. The proposed framework is also applicable to the case when offset areas already hold conservation value and do not require restoration action, in which case uncertainty about the conservation outcome will be lower.

Introduction

Jump to…

Several countries have adopted policy to regulate the impact of economic development on natural habitats. After estimating the expected damage that a particular development project will do to existing habitat and associated species, a hierarchy of measures can be employed to alleviate the impact (Cuperus et al. 2001; ten Kate et al. 2004). The first step in this hierarchy aims at avoidance of the impact, e.g., by looking for alternative locations for development, where impact will be less severe. Once the development location is chosen, the second step concerns minimizing the impact. In the European context, this step is often referred to as mitigation, whereas in North America, the term mitigation often refers to the third step, the use of compensation measures for unavoidable damage to natural areas (Race & Fonseca 1996; ten Kate et al. 2004). Here, we use the term biodiversity offsets to indicate ecological compensation for unavoidable damage.

Biodiversity offsets involve the designation of compensation areas, which either hold significant conservation value already or where habitat creation, recreation, or restoration practices are carried out in order to balance for biodiversity loss elsewhere. Typically, loss is caused by direct anthropogenic action (urban expansion, etc.), but offsets could also be used to compensate for the slow degradation of biodiversity from present reserve areas (Sinclair et al. 1995). As ten Kate et al. (2004) emphasize in their review, quantitative guidelines for determining offset ratios and types are generally lacking. Typically, rules of thumb are used to describe offset requirements in terms of the location and habitat type; compensation areas near the development site and of a similar habitat type are preferred. Although the size of the affected areas is a quantitative measure, determining the conservation value of habitat remains difficult (ten Kate et al. 2004).

A similar concept, No Net Loss (NNL), has been developed for wetlands under the Fisheries Act in Canada and the Clean Water Act in the United States. Under these regulations, permits for development often require offsets to compensate for damaged wetlands. Harper and Quigley (2005) evaluate this approach for Canada (Harper & Quigley 2005; Quigley & Harper 2006*a*, 2006*b*). Quigley & Harper (2006*b*) report that although compensation requirements did determine required offset ratios to be on average 6.8:1 (area gained: area lost), the mean offset ratio that was actually implemented was only 1.5:1, resulting in 10 out of 16 cases not reaching NNL in terms of habitat productivity. Poor compliance to offset agreements was also found to be a problem in Australia by Gibbons and Lindenmayer (2007). The principle of NNL is similar to the concept of strong sustainability in capital theory, which requires that each form of capital, such as conservation value, is kept constant (Cowdy & Carbonell, 1999; Figge & Hahn 2004). A related concept, weak sustainability, allows that different forms of capital can be substituted for each other (Figge & Hahn 2004).

Habitat banking and Habitat Equivalency Analysis (HEA) are yet another two concepts used in the context of habitat compensation measures. Habitat banking, also referred to as "mitigation banking" or "conservation banking," aims at conservation practices which generate "biodiversity credits" that can be traded for later habitat destruction elsewhere by development practices (Bruggeman et al. 2005; Morris et al. 2006). An explicit feature of banking is that credits are generated before damage is undertaken. In contrast, with offsets, damage and credits are generated at best simultaneously. Due to inevitable delays in the growth of conservation value in restoration areas, credits can be realized after a substantial time delay (Morris et al. 2006).

HEA aims to compensate injured natural resources and has, in particular, been applied to coastal and marine habitats (National Oceanic and Atmospheric Administration 2000). Although HEA is widely applied in practice (particularly in the United States), very little has been published in peer-reviewed literature (Race & Fonseca 1996; Dunford et al. 2004). HEA involves quantitative measures to determine the amount of compensation required, potentially accounting for time delays in the process. Dunford et al. (2004) provide a thorough demonstration of the use of HEA in the context of oil spills. Framed in the context of conservation banking, Bruggeman et al. (2005) extended the concept of HEA to terrestrial habitats and coined the term Landscape Equivalency Analysis. They incorporate spatial and population genetic aspects quantitatively into the valuation of habitats and species.

In this study, we are interested in determining the offset ratio needed to achieve a fair exchange of areas. Fair could be defined in many ways. Most simply, one could use a criterion we call "matching mean expected utilities"; utility that is gained (eventually) from the compensation areas is estimated to exactly compensate for the immediate loss of utility from the development site. This criterion is deficient in that it ignores the time lag before the full value of compensation areas is realized, as well as uncertainty in the extent to which the expected conservation value at the compensation areas will be realized (Hilderbrand et al. 2005). Heuristically, matching mean expected utilities is like making a zero interest rate (biodiversity) loan to someone who is known to be unreliable and might pay back decades later.

We compare matching mean expected utility to a strategy that we call robustly fair offsets. We specify that compensation should be fair in the sense that net loss of conservation value is unlikely even when various uncertainties are accounted for. We investigate at a theoretical level what influence the following components have on the estimate of a fair offset ratio: (1) uncertainty in the amount of compensation gained; (2) correlation between (restoration) success of different compensation areas; and (3) time discounting. We develop a framework for the calculation of robustly fair offsets. Using a mathematically simple example, we demonstrate that assumptions about these components make a huge difference for the amount of compensation (offset ratio) that should be perceived as adequate.

Methods

Jump to…

The Conceptual Framework of Robustly Fair Offsets

Our goal of offsetting is consistent with NNL in the sense that present loss is compensated by future gains, accounting for uncertainty and time lags in the development of these gains. We specify that the probability of incurring net loss must be small, thereby ensuring what we call "robustly fair offsets." The uncertainty is a critical component when the aim is to avoid net loss due to unfavorable growth of conservation value at the restoration areas.

We assume three components of uncertainty. (1) Future value could be less than estimated, which could, e.g., represent the case that an area of forest develops fewer nesting holes than expected or that forest understory develops a community which is less species rich than expected. Outcome could be uncertain even when it is practically immediate, e.g., if compensation sites do not require restoration but the areas are poorly surveyed so that what is gained by the exchange is not accurately known. (2) Some feature of conservation value might completely fail to be established, e.g., a focal species may fail to colonize the area. (3) We also allow for the possibility that success and failure could be correlated between different restoration areas. The uncertainties in our analysis are most relevant where restoration action is applied at compensation areas. However, the proposed framework is equally applicable when compensation areas are such that they already hold substantial conservation value and some form of protection is applied rather than restoration action. In this case, uncertainties are smaller (or even zero), but the structure of the proposed calculations need not be changed.

We account for uncertainty by adopting a decision-theoretic approach to the calculation of offsets. If statistical models are available for the components above, one could use a statistical approach for identifying an offset ratio, which has, e.g., less than 5% chance of resulting in net loss. However, our formulation includes parameters, such as long-term success of restoration effort, for which it may be difficult to obtain reliable distributional information. In such a case, information-gap decision theory (Ben-Haim 2006; hereafter info-gap theory), which we employ here, provides a straightforward way of analyzing the influence of uncertainty on the offset ratio.

Time discounting (Carpenter et al. 2007) of the offset ratio is included because it is not fair to compensate immediate loss by hypothetical distant future gain. Presumably, the conversion of the development site would produce a relatively immediate economic return in the order of some percents per year. This revenue could plausibly be used for further environmentally harmful activity either directly or indirectly. On the other hand, conservation benefits arising from restoration effort may take a very long time to materialize fully, e.g., if one needs to wait for forest to grow. Consequently, we find it reasonable that the offset ratio should be calculated as a time-discounted weighted average across the planning frame. Omitting time discounting could place nature conservation efforts at an overall disadvantage.

These components have been noted in prior work: The outcome of restoration is often different from expected, for instance, due to existence of alternative equilibria and differences in ecological dynamics between degraded and less-impacted systems (Zedler & Callaway 1999; Folke et al. 2004; Suding et al. 2004; Hilderbrand et al. 2005). Following restoration, ecosystems can recover into different states from the same initial condition (Folke et al. 2004). Restoration action can fail despite the correct management action if, for instance, rainfall does not occur (Vesk & Dorrough 2006). Several authors note that there is uncertainty associated with the expected outcome of restoration (Cuperus et al. 2001; Bruggeman et al. 2005; Morris et al. 2006; Gibbons & Lindenmayer 2007) but do not explicitly account for it in their analyses. Keagy et al. (2005) investigate the feasibility of compensation for maintaining overall population abundance in the study area, when the compensation areas are of inferior quality compared to the lost habitat. Gibbons and Lindenmayer (2007) conclude that offsets will only contribute to NNL if (1) clearing is restricted to vegetation that is simplified enough so that its functions can be restored elsewhere; (2) any temporary loss in habitat between clearing and maturation of an offset does not represent significant risk to a species, population, or ecosystem process; and (3) offsets are substantial enough and they are complied to. HEA explicitly includes time discounting as an option (Dunford et al. 2004; Bruggeman et al. 2005). Morris et al. (2006) and Roach and Wade (2006) both mention that there is a time lag between impact and compensation, although they do not present methods that explicitly take that into account in analysis. Here we combine all these factors together into the same quantitative theoretical analysis.

Evaluating Offset Solutions Using an Uncertainty-Analytic Approach

We use info-gap theory (Ben-Haim 2006) to analyze the consequences of uncertainty for establishing a fair offset ratio. The main components of the info-gap theory are the goal (performance aspiration), the performance function, the nominal model, the uncertainty model, and the robustness function.

Our goal is to robustly achieve NNL. The nominal model is our best estimate for the expected conservation value in the development area and compensation areas (thick lines in Fig. 1). We indicate nominal models by $\bar{V}_0(t)$ and $\bar{V}_i(t)$ for conservation value at time *t* at the development area and compensation area *i*, respectively. The nominal model represents our best understanding of how conservation value will change in these areas over time. However, this information may be quite uncertain, which is modeled by the second central component of info-gap analysis, the uncertainty model (thin lines in Fig. 1). Note that instead of staying stable, conservation value at the development site could be declining, which would lead to smaller offset ratios.

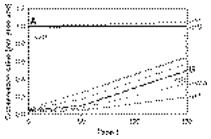

Figure 1. The assumed per unit area change in conservation value at the development area (thick solid line) and at the restoration areas (thick dashed line). Thin lines represent uncertainty bounds around these estimates; the relative uncertainty about the growth of conservation value at the restoration area is in our example higher compared to uncertainty about maintenance of value at the development site. The width of the uncertainty bounds would depend on the info-gap horizon of uncertainty parameter, *α*. When *α* is zero, the estimate (thick line) is taken as certain. With increasing *α*, the range of values possible for conservation value widens. Points A and B are used when calculating a naïve offset ratio based on mean expected value. Note that the conservation value of the development site is our estimate of what it would be if it was not developed. We assume that as a consequence of development, all conservation value is lost.

The info-gap uncertainty model does not simply place bounds around the nominal estimate, as it might appear from Figure 1 because worst-case bounds are at best poorly known. Rather, the robustness of solution candidates are analyzed in terms of an uncertainty parameter, the horizon of uncertainty *α*. When this parameter is zero, it indicates full confidence in our nominal model and the nominal model is accepted as the true model. Higher values for *α* indicate less confidence in the nominal model: the true model is somewhere within an expanding bound around the nominal model. In our example of Figure 1, the uncertainty model is represented by the thin lines around the nominal model. When *α* = 0, the thick line is taken as the truth, and increasing *α* implies expanding bounds of possible outcome. Importantly, different areas and restoration actions could have different nominal estimates as well as different levels of uncertainty (often called error weights). For example, smallest error weights could be associated with a presently high-quality area that has been well surveyed. A relatively higher error would go for an area that is apparently valuable but is poorly surveyed. Highest error weights would be associated with areas where there is substantial lack of knowledge concerning the growth of conservation value there, e.g., as a consequence of trying out a completely new restoration technique. Technically, when evaluating a solution at any given level of *α*, the solution is evaluated according to the most adverse choice of the model inside the uncertainty bounds.

However, since the horizon of uncertainty, α, is unknown, a solution is evaluated according to the greatest αup to which that solution yields adequate outcomes.

The aim of our uncertainty analytic approach is to identify solutions that are robust in the sense that they achieve our performance aspiration even when allowing for high uncertainty. In the typical info-gap formulation, the robustness of a solution, α^*, is the highest αat which it is guaranteed to meet the performance target (Fig. 2a). A solution is not robust if it may fail to achieve the goal even at low α, indicating that a small deviation from expected restoration outcome might miss the target of NNL.

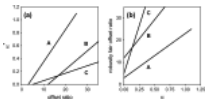

Figure 2. An illustration of how offset solutions would be compared in the info-gap approach. Panel (a) is the typical info-gap representation, in which solutions are graphed in terms of the level of uncertainty they can allow while still guaranteeing the performance goal (NNL). Panel (b) shows the offset ratio needed to guarantee NNL at given level of uncertainty. Each line is for one candidate solution, when uncertainty, α, increases. Of the three candidates, solution A is always best because it produces highest conservation value. Candidate C is better than B with low uncertainty, but with high uncertainty, B guarantees better outcome. Preference between B and C would depend of the level of confidence required for the solution. These curves can be graphed in two alternative ways.

Each offset candidate solution would be examined in terms of its performance under increasing uncertainty. This is illustrated in Figure 2. Assuming that offset candidates A, B, and C have equal cost, then A is the best option because it achieves goals while allowing for highest uncertainty (Fig. 2a). Candidate C is the second best option assuming nominal models are correct. However, candidate B is more robust to increasing uncertainty than C.

The robust optimal solution is the one solution that achieves the planners specified goals while allowing for highest possible errors in the nominal models. If only a few scenarios need to be compared, then solution performance and robustness can be evaluated for all candidates. If, however, the robust optimal solution needs to be identified from a large set of options (such as selecting 100 out of 1,000 sites), then some optimization method is needed. Below, we calculate the offset ratio that is sufficient for guaranteeing NNL while accounting for the modeled uncertainties (Fig. 2b).

A Simple Example of the Method

We illustrate the proposed method for the simple case where one unit area of land with relatively high conservation value is offset by a number of units of less valuable land that is restored. In this example, conservation value is treated as a one-dimensional construct. Table 1 gives a summary of symbols used in the equations.

Table 1. Explanation of symbols used.

t_p	Length of planning period
β	Reliability requirement, the probability of net loss should be less than $(1-\beta)$
p	Failure probability of restoration action at an area
ρ	Correlation coefficient for failure of restoration action between areas
d	Time discounting rate
α	Info-gap robustness parameter, horizon of uncertainty
$\tilde{V}_0(t)$	Best estimate for per unit area conservation value of the development site at time t (per unit area)
$\tilde{V}_i(t)$	Best estimate for per unit area value of compensation area option i at time t
$w_0(t)$	Size of error envelope (weight) of $\tilde{V}_0(t)$
$w_i(t)$	Error weight of $\tilde{V}_i(t)$; with restoration $w_i(t) >> w_0(t)$
$N_{\text{method}}(\alpha, t)$	Number of equal-sized offset areas needed according to an offset calculation using the method indicated by subscript, N_{simple}, N_{IG}, N_{prob}, N_{corr}, and $N_{\text{discounted}}$, for Equations 1, 2, 3, 5, and 7, respectively. This quantity depends on both $\alpha$and t via Equation 2

Assuming that all conservation value of the high-quality development area will be lost following the land exchange, a naive solution using matching of mean expected utility for the offset ratio is as follows:

$$N_{\text{simple}} = \frac{\tilde{V}_0(0)}{\tilde{V}_i(t_p)}, \tag{1}$$

where $\tilde{V}_0(0)$ is the best estimate for the conservation value of the development area presently (at time 0) and $\tilde{V}_i(t_p)$ is the best estimate for the final conservation value of the restoration area at the end of the planning period at time t_p. This is the ratio A/B in Figure 1. N_{simple} units of restoration land are eventually predicted to hold the same conservation value as the development area.

We extend this solution to consider two sources of uncertainty: (1) that the conservation value achieved at the restoration areas could be less than expected and (2) that the conservation value of the development area could be even better than is thought. In the simplest version, to calculate the robustly fair offset ratio, $N_{\text{IG}}(\alpha, t)$, the info-gap formulation only requires that $\tilde{V}_0(t)$ is replaced by $\tilde{V}_0(t) + \alpha w_0(t)$ and $\tilde{V}_i(t)$ by $\tilde{V}_i(t) - \alpha w_i(t)$ in Equation 1:

$$N_{\text{IG}}(\alpha, t) = \frac{\tilde{V}_0(t) + \alpha w_0(t)}{\tilde{V}_i(t) - \alpha w_i(t)} \tag{2}$$

Here, $w_0(t)$ and $w_i(t)$ are relative error weights for conservation value at the development area and compensation areas at time t in the future. For instance, these envelope functions may derive from statistical modeling and/or expert opinion. Because other experts may have yet other opinions, or differently framed questions may elicit different expert responses, the uncertainty envelopes are multiplied by the unknown horizon of uncertainty, α. In our example $w_0(t)$ and $w_i(t)$ were calculated as the difference between the nominal estimate and the hypothetical error bounds of Figure 1, indicating that at α= 1, the uncertainty envelope has expanded to the outer thin lines.

In the next level of sophistication, we allow for the possibility that conservation action in any one land unit could also fail altogether with a probability p. It is then logical to require that the even exchange would be achieved with a given reliability level β, say β= 0.95. The number of unit areas where conservation action would succeed, N_S, is now distributed binomially as $N_S \sim \text{Bin}(N, p)$. To satisfy the reliability requirement, we need $\text{Prob}[N_S < N_{\text{IG}}(\alpha, t)] < (1-\beta)$. Denoting by $N_{\text{prob}}(\alpha, t)$, the minimum number of unit areas needed, this number can be determined by finding smallest $N_{\text{prob}}(\alpha, t) > N_{\text{IG}}(\alpha, t)$ for which

$$\sum_{k=0}^{N_{\text{IG}}(\alpha,t)-1} \binom{N_{\text{prob}}(\alpha,t)}{k} (1-p)^{N_{\text{prob}}(\alpha,t)-k} p^k < (1-\beta) \tag{3}$$

Equation 3 assumes statistical independence in success of restoration effort between different sites when calculating $N_{\text{prob}}(\alpha, t)$. The assumption of independence is a strong one, and in general restoration, success between distinct restoration sites would be correlated to some degree (Fig. 3 illustrates effects of correlation). Ovaskainen and Hanski (2003) give a formula for the effective number of independent units, N_{eff}, when there is an uniform level of pairwise correlation, ρ, between N_{corr} sites,

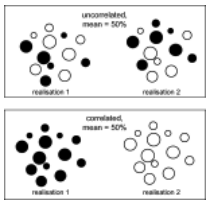

Figure 3. Illustrating effects of correlation. In both the uncorrelated and the correlated cases, the a priori chance of restoration success is 50% per site but the realized patterns are very different. Black and empty circles indicate sites with restoration success and failure, respectively.

$$N_{\text{eff}} = \frac{N_{\text{corr}}}{1 + \rho(N_{\text{corr}} - 1)} \tag{4}$$

This equation essentially states that if the correlation is ρ, then there can be at most $1/\rho$independent units irrespective of how many sites there are. Note that Equation 4 ignores higher-order correlations but, even so, it provides useful insight into the influence of correlation on the fair offset ratio.

Assuming N_{corr} correlated sites, we have only N_{eff} effective independent units, each of average size $S = N_{corr}/N_{eff}$. We then require that unit-size times the minimum number of units that succeed with reliability greater than βmust be greater than $N_{IG}(\alpha, t)$. The number of effective units where conservation action would succeed, N_S, is now distributed $N_S \sim \text{Bin}(N_{eff}, p)$. To satisfy the reliability requirement, we need $\text{Prob}[SN_S < N_{IG}(\alpha, t)] < (1 - \beta)$. The minimum number of real units needed for this relation to be true can be determined numerically by finding smallest $N_{corr}(\alpha, t)$, for which

$$\frac{N_{\text{corr}}(\alpha, t)}{N_{\text{eff}}} N_{\min} > N_{\text{IG}}(\alpha, t), \tag{5}$$

where N_{eff} comes from Equation 4 and N_{min} is the smallest number of units (out of N_{eff}) that succeed with a probability of at least β. N_{min} can be determined by inspecting the tail of the binomial distribution for the effective number of successful independent units. It is the largest number such that, out of N_{eff} units, at most $N_{min} - 1$ can fail with probability $(1 - \beta)$ or less, which implies that N_{min} or more units will succeed with probability greater than β:

$$\sum_{k=0}^{N_{\min}-1} \binom{N_{\text{eff}}}{k} (1-p)^{N_{\text{eff}}-k} p^k < (1 - \beta). \tag{6}$$

Note that Equation 6 cannot always be satisfied. For example, with $\rho = 0.25$, there can be at most four effective independent units. Then, if the failure probability of a unit is 0.5, a 95% reliability can never be achieved because $0.5^4 = 0.0625 > (1 - 0.95)$ meaning that the chance of all units failing is greater than the 5% allowed.

We add one final component, time discounting, to our analysis. A time-discounted offset ratio can be obtained simply as follows:

$$N_{\text{discounted}}(\alpha, t) = \frac{\sum_{t=0}^{t_p} (1 - d)^t N_{\text{method}}(\alpha, t)}{\sum_{t=0}^{t_p} (1 - d)^t}, \tag{7}$$

in which d is the time-discounting coefficient and $N_{method}(\alpha, t)$ represents any of the offset ratios from Equations 1, 2, 3, or 5, where the offset calculations have been done at time t using given horizon of uncertainty α. For practical purposes, this means that the offset ratio is weighted most heavily by the early years when the quality of the restoration areas is worst.

Results

Jump to…

We use our simple model to analyze the effects of uncertainty, correlation, and time discounting on the offset ratio. In our example, matching of mean expected utilities gives $N_{simple} = 2$, implying that an exchange could indeed be feasible—that is, by restoring an area twice the size of that lost to development. Figure 4 shows the effects of info-gap uncertainty analysis on the offset ratio (solid line). With $\alpha = 0$, the ratio $N_{IG}(\alpha, t_p) = N_{simple}$, but when αincreases, the ratio increases substantially. In the present case, $N_{IG}(1, t_p) = 1.05/0.2 = 5.25$. Hence, accounting for uncertainty in the growth of conservation value makes a large difference to the offset ratio.

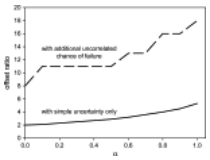

Figure 4. Offset ratio required to get "a fair even exchange" when exchanging one unit area of high conservation value with initially poor-quality restoration compensation areas. The solid line shows the ratio with simple effects of uncertainty ($N_{IG}(\alpha, t)$, with $t = t_p$; Equation 2) and the dashed line shows the respective result, assuming there is an additional uncorrelated per unit area chance of complete failure of restoration activity (N_{prob} assuming $p = 0.5$; Equation 3). (Steps in the dashed line are due to rounding down to integer values when calculating the number of areas needed.)

Next, we allow for the additional possibility that restoration fails completely in some of the restoration areas, e.g., because the most important focal species fail to migrate/establish there (Suding et al. 2004). We assume that each area has a 0.5 probability of complete failure, $p = 0.5$ in Equations 3 and 6. The number of restoration unit areas needed for replacing the conservation value of the development site with 95% reliability is given by the dashed line in Figure 4. This ratio grows from 1:8 ($\alpha = 0$) to 1:18 ($\alpha = 1$). Allowing uncertainty has thus changed our perception of the number of unit areas needed from 2 to 18. Note that with 18 units, the expected utility is 18 × 0.5 × 0.5 = 4.5, where the halves account for predicted restoration value and the chance of failure. In fact, the expected utility is one quarter of the number of restoration unit areas in all our subsequent analyses.

The solid lines in Figure 5 show the offset ratios we obtain using time discounting (Equation 7; assuming 50% chance of failure per unit area and a 95% reliability requirement). With 1, 3, and 5% time-discounting coefficients, the $\alpha = 1$ offset ratios are now 1:59, 1:82, and 1:95, respectively. Even using no time discounting (0%) but calculating the ratio as an average over the 150-year planning horizon gives a ratio of 1:45 for $\alpha = 1$.

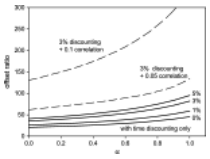

Figure 5. The robustly fair offset ratio when assuming time discounting on top of the uncorrelated chance of failure (solid lines; Equation 7 applied on N_{prob}; cf dashed line in Fig. 2). Offset ratio when adding a further 5 or 10% correlation on top of 3% time discounting (dashed lines; Equation 7 applied on N_{corr}).

We have left for last the hardest factor in our analysis, that is, correlation (dashed lines in Fig. 5). If the restoration success of individual sites is strongly correlated with the restoration success at other sites, then restoration either succeeds in (almost) all sites or fails simultaneously in all sites. Notably, with strong correlation, increasing the number of restoration sites does not notably decrease the probability of complete failure. Figure 5 demonstrates a major influence of correlation on the offset ratio. A small 10% correlation increases the fair offset ratio from approximately 80 to 340 when assuming 3% yearly time discounting.

Discussion

Jump to…

Using various assumptions, our estimate of the fair offset ratio increases quickly from two to hundreds in our simple example. This potentially surprising result is due to the criterion

on which we have based our analyses. Instead of using the mean expected value of the restoration areas to determine the offset ratio, we look at the robustness of the proposed exchange in not producing a net loss. These criteria are completely different. The mean expected value criterion is based on the assumption that conservation value of restoration sites grows as expected. However, it is quite possible that although a proposed exchange promises high expected conservation value, it, at the same time, has a high likelihood of (almost) complete failure. This would be the case, e.g., when a large area of similar habitat is restored using a single method, which is not guaranteed to work. In this case, the mean expectation for the conservation value of the restoration areas is high (because the area is large), but the probability of correlated failure across the entire region is large as well (because the effectiveness of the restoration action is not guaranteed). Furthermore, the time evolution of the conservation value of a site is subject to severe info-gap uncertainties.

The influence of time discounting on the offset ratio may be large as well. In fact, if the improvement of conservation value is slow enough, it is questionable whether the habitat should be considered restorable at all (Morris et al. 2006). Still, correlation in restoration success between different areas is the factor that has the greatest influence on the offset ratio in our analysis. Is correlation, of the type we have simulated here, likely to be relevant for real-world planning situations? We believe so. Correlation in restoration success will be increased by (1) uniform habitat quality and environmental conditions across the restoration sites; (2) the same restoration action being applied across all areas; and (3) physical proximity of restoration sites. All these conditions apply commonly in the real world. We would expect an effective absence of correlation only if different restoration actions are applied in different habitat types occurring in different regions. However, if restoration areas are close to each other, some level of correlation is likely to be present. This is because, according to the basic principles of spatial population ecology (Hanski 1998), dispersal and establishment of species into the area will depend on the distance to nearby source areas and on the quality and species composition of these source areas (Donald & Evans 2006). If the restoration sites effectively share the same colonization source areas, then it can be expected that a similar set of species will eventually colonize the restoration areas. Or, if sources are far away, some species of conservation value might fail to reach any of the restoration sites (Bakker et al. 2000). Furthermore, if restoration areas become suitable for the focal species only after a lengthy maturation of vegetation, then it is possible that nearby population sources will disappear before the restoration areas become sufficiently suitable to allow colonization. Correlated failure can of course be avoided by selecting offset areas that already hold reasonable conservation value and therefore require protection rather than restoration.

In summary, when calculating offsets, one should recognize that loss is immediate but gain is uncertain and may not be achieved for a long time into the future. Accounting for uncertainty in offset calculations, and aiming at offsets that robustly avoid net loss, may suggest much higher offset ratios than recommended by matching of mean expected utilities. To obtain a reliably good offset solution, one should employ a bet-hedging strategy, where presently valuable offset areas are preferred, and restoration effort is split among an anticorrelated, or at least uncorrelated, set of sites—that is, where different restoration actions are applied across environmentally different, and spatially dispersed, sites. We emphasize that the offset ratios obtained in our hypothetical example are specific to this example and should not be used as any practical guideline. If compensation areas are of better quality than the development site, then the appropriate offset ratio could even be less than one. The important observation here is the potentially large influence that uncertainty and time discounting could have on fair offset ratios.

The present theoretical analysis is only a first step toward the calculation of robustly fair offset ratios. For example, we used an aggregate one-dimensional measure of conservation value, whereas in general, one would aim at a satisfactory outcome across a broad range of biodiversity features simultaneously, accounting for complementarity, retention of the features in the landscape, and certainty of species' occurrences in sites. One could require that offsetting is robustly fair for all features simultaneously, which implies potentially large offset ratios and an optimization strategy analogous to target-based reserve selection (Margules & Pressey 2000) accounting for retention (Pressey et al. 2004; Moilanen & Cabeza 2007). An alternative is to require that summed conservation value across features does not decline, allowing a reduction of one feature to be compensated via increased representation for other features, which resembles the additive benefit function approach to reserve selection (Arponen et al. 2005; Moilanen 2007). This approach would allow much flexibility for offsetting, which has potential for both success and misuse.

Also, our analysis does not cover the involved mathematical details of how to handle partial correlation in restoration success between restoration options. We have assumed areas of equal size and cost. Uncertainty could be relevant for many other components of our model, such as the failure probability or correlation, instead of just the development of conservation value at compensation areas. We have also ignored questions of connectivity, spatial population dynamics, and questions of persistence. Performing offset calculations involving such complications will allow for increasingly robust and realistic allocation of habitat restoration effort.

Implications for Practice

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- Uncertainty in effectiveness of restoration action should be accounted for when calculating offsets, otherwise a long-term net loss for conservation is likely.
- Time discounting of conservation value, with a rate comparable to the economic return expected from the development site, should be used in offset calculations when conservation value grows slowly in the compensation areas.
- If the same restoration action is applied to a set of environmentally similar sites that are close to each other or effectively combining into one larger compensation area, then success of restoration action is likely to be highly correlated across sites, implying a risk of net loss even if the compensation area is large.
- From an uncertainty–analytic view, the safest offset solution consists of a set of different areas that are treated in variable ways, catering for the needs of partially different groups of species. An informed bet-hedging strategy is less likely to fail a minimal performance requirement (NNL) than a strategy that relies on the success of one particular action at one large compensation area.

Acknowledgments

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Biodiversity Offsets: Two New Zealand Case Studies and an Assessment Framework

David A. Norton

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Abstract Biodiversity offsets are increasingly being used for securing biodiversity conservation outcomes as part of sustainable economic development to compensate for the residual unavoidable impacts of projects. Two recent New Zealand examples of biodiversity offsets are reviewed—while both are positive for biodiversity conservation, the process by which they were developed and approved was based more on the precautionary principal than on any formal framework. Based on this review and the broader offset literature, an environmental framework for developing and approving biodiversity offsets, comprising six principles, is outlined: (1) biodiversity offsets should only be used as part of an hierarchy of actions that first seeks to avoid impacts and then minimizes the impacts that do occur; (2) a guarantee is provided that the offset proposed will occur; (3) biodiversity offsets are inappropriate for certain ecosystem (or habitat) types because of their rarity or the presence of threatened species within them; (4) offsets most often involve the creation of new habitat, but can include protection of existing habitat where there is currently no protection; (5) a clear currency is required that allows transparent quantification of values to be lost and gained in order to ensure ecological equivalency between cleared and offset areas; (6) offsets must take into account both the uncertainty involved in obtaining the desired outcome for the offset area and the time-lag that is involved in reaching that point.

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Keywords Biodiversity offsets · Environmental compensation · Mitigation · Assessment framework · Resource Management Act · Policy · Restoration

Introduction

Biodiversity offsets are rapidly emerging as an internationally important policy instrument for securing biodiversity conservation outcomes (ten Kate and others 2004). Typically they involve the protection of habitat that either holds existing significant conservation value or where restoration will be undertaken to compensate for the loss of similar values elsewhere. Biodiversity offsets are being used widely by government organizations and the private sector to permit development activities which involve clearance of natural ecosystems and habitats within a framework of no-net-loss or net-gain (ten Kate and others 2004). Although relatively new as a concept, the offset approach has a number of antecedents most notably in North American wetland mitigation projects (Zedler 1996).

Biodiversity offsets have been defined by ten Kate and others (2004) as: "Conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity."

In North America, biodiversity offsetting is usually referred to as "mitigation." For example, under the no-net-loss policy for wetlands in the United States, unavoidable impacts that damage wetlands (e.g., infilling or draining) must be mitigated by replacement or enhancement elsewhere (Zedler 1996). In Europe, offsetting is more often referred to as compensation, and usually involves habitat creation to offset development impacts (Morris and others 2006).

One of the major criticisms of biodiversity offsets, especially in North America, is that most approved offsets fail to meet their objectives or never actually occur. For example, one study of wetland offsets in Florida found that no mitigation work had even been attempted for 34% of the 63 permits reviewed (Race and Fonseca 1996), while a more recent study of 76 wetland mitigation projects found that 67% failed to create or restore their minimum required area (Matthews and Endress 2008). In Canada, Harper and Quigley (2005) found that offset conditions were not followed in 86% of 124 fish habitat developments.

Notwithstanding these concerns, biodiversity offsetting is now being widely used (ten Kate and others 2004), but the assessment of the ecological costs and benefits of this policy tool have been slower to occur. However, several recent papers (Hilderbrand and others 2005; Harper and Quigley 2005; Morris and others 2006; Gibbons and Lindenmayer 2007; Moilanen and others 2008; Matthews and Endress 2008) provide the basis for the development of a framework for assessing the applicability of biodiversity offsets.

In this article, I initially review two New Zealand development proposals where offsets have been proposed and accepted by the New Zealand environmental planning process, and then outline an environmental framework within which to consider the use of biodiversity offsets. Given that biodiversity offsets sit at the nexus between environmental science and policy, this framework will assist both those developing offset proposals, and the regulatory authorities consenting such proposals, to ensure that offsets do meet the no-net-loss of biodiversity definition (ten Kate and others 2004).

New Zealand Examples of Biodiversity Offsets

In New Zealand, the management of natural resources, including the clearance of indigenous vegetation, is governed by objectives, policies, and methods, including rules that are developed by local authorities (city/district and regional councils) and outlined in city/district and regional plans. These rules set the bounds for a wide range of different land and water uses and activities and are developed within the context of the New Zealand Resource Management Act 1991 (RMA; Memon and Gleeson 1995). The purpose of the RMA is to ensure the sustainable management of natural and physical resources (Section 5[1]), where sustainable management is defined as (Section 5[2]):

> "managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:
>
> (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
> (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
> (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment."

Anyone who wishes to undertake activities that are not permitted in relevant city/district or regional plans must apply for resource consent(s) for the activity. These applications are considered by the relevant council in terms of both the provisions of their plan and the RMA itself. The decisions reached from these deliberations can then be appealed to the Environment Court which then re-hears the whole case before reaching a decision. Expert witnesses play a key role in placing technical and scientific material before the consent hearing or Court. While Environment Court decisions can be appealed to higher courts, such appeals are only on points of law and are uncommon. It is the Environment Court that clarifies the intent of the RMA and thus sets the case law which guides consideration of other applications. Where development results in what are considered as "more than minor" effects on the environment, then the applicant needs to show how they will "avoid, remedy or mitigate" effects.

The application of biodiversity offsets in New Zealand is relatively new (Borrie and others 2004; Christensen 2007). The idea of biodiversity offsets, usually called environmental compensation, has been considered in several recent decisions of the New Zealand Environment Court. In the Court's decision on the J F Investments Limited case (C48/2006) the Court defined environmental compensation as: "Any action (work, services or restrictive covenants) to avoid, remedy or mitigate adverse effects of activities on a relevant area, landscape or environment as compensation for the unavoided and unmitigated adverse effects of the activity for which consent is being sought."

The following examples illustrate the way in which the biodiversity offset concept has been applied in New Zealand and are typical of recent development projects that have included offset or compensation proposals.

Kate Valley Landfill

Kate Valley is located in coastal hill country in New Zealand's eastern South Island (Motunau Ecological District, 43° 06′ S, 172° 51′ E, 0-346 m a.s.l.; Norton 2005). The underlying geology comprises Tertiary seabed strata dominated by fine-grained compacted sedimentary deposits including limestone and mudstone. Annual rainfall is 921 mm but with considerable variation within and between years. The area typically experiences warm dry summers

Table 1 Kate Valley vegetation types at the time the biodiversity offset proposal was developed (Norton 2005)

Vegetation type	% land area
Exotic pasture	60
Kunzea ericoides shrubland and low forest	15
Indigenous shrubland	10
Exotic shrubland	7
Exotic conifer plantations	3
Wetland	4
Old growth *Nothofagus solandri* forest	1

and cool wet winters. Snow is rare, although frost can occur in winter, especially in valley bottoms away from the coast. The property has had a mixed farming history, but because of erosion and weed problems has been typically farmed as an extensive sheep and cattle property.

Pasture is the dominant vegetation type (Table 1). While some very small (<1 ha) remnants of old growth indigenous forest remain, the predominant indigenous vegetation is seral *Kunzea ericoides* (kanuka) shrubland and low forest with varying mixtures of other regenerating indigenous tree species, and mixed indigenous shrubland, although this accounts for 25% of the land area. All forest and shrubland areas have been strongly modified by domestic stock and are typically devoid of regeneration except in inaccessible sites.

After a long period of investigation, Transwaste Canterbury Ltd. (TCL) identified Kate Valley as the preferred site for a new regional landfill and applied in 2002 to Hurunui District Council for resource consent. TCL is a 50/50 public/private joint venture between local government and two waste management companies The consent was granted in 2003 subject to a number of conditions, some of which TCL felt were too restrictive while parties in opposition to the landfill felt that consent should have been declined in its entirety. One matter that was the subject of debate was a condition of the consent that required a <1 ha remnant of *Nothofagus solandri* (black beech) forest (referred to as 'Remnant A') be retained. TCL wished to see this removed to enable the landfill to be of a viable size while opposing parties wanted it to stay. TCL and three opposing parties filed appeals to the Environment Court which heard the case in September–November 2003. As part of their appeal TCL revisited a number of elements of the project including the environmental compensation (biodiversity offset) being offered and put a new and substantially bigger offset package before the Court. The Court accepted the biodiversity offset proposed and granted consent for the revised proposal including allowing removal of "Remnant A." (Environment Court decision C29/2004, 22 March 2004).

The biodiversity offset proposal accepted by the Court involved the long-term protection, restoration, and management of a 410 ha "Conservation Management Area" adjacent to the Kate Valley landfill (now known as Tiromoana Bush; www.tiromoanabush.co.nz). The Court further specified that the consent holder (TCL) must at its own cost undertake a number of actions including:

- Register a covenant against the title which provides legal protection in perpetuity of Tiromoana Bush prior to the acceptance of first waste.
- Permanently fence Tiromoana Bush and remove all domestic grazing animals within two years of the issuing of the consent and prior to the acceptance of first waste.
- Within two years of the issuing of the consent, and prior to the acceptance of first waste, commission and submit a detailed restoration plan for Tiromoana Bush.
- Commence and continue implementation of the Restoration Plan in accordance with the priorities and timeframes outlined in the Restoration Plan including:
  - producing an annual report on progress on the Restoration Plan.
  - sourcing all plant species used for planting either from Tiromoana Bush itself or from the southern part of the Motunau Ecological District.
  - initiating and continuing animal and plant pest control programmes within Tiromoana Bush during the operating life of the landfill.
  - carrying out propagation and transplanting of *Nothofagus solandri* seedlings from Remnant A into Tiromoana Bush.
  - providing controlled public access for recreational, educational and scientific use to Tiromoana Bush by a walking track.
- The costs of the obligations arising under this condition are to be funded directly by TCL, with such funding being independent of and not reliant upon cashflow from the landfill.

The Tiromoana Bush Restoration Management Plan (Norton 2005) identified three components to the restoration work; natural regeneration of the remnant indigenous forest areas as a result of removal of domestic grazing animals, natural regeneration in pasture areas as a result of removal of domestic grazing animals, and establishment of restoration plantings to enhance connectivity between remnant patches and to reintroduce key plant species for indigenous fauna.

Waikatea Station Farm Development

Waikatea Station (3570 ha) is typical of sheep and cattle farms that occur through the hill country of New Zealand's eastern North Island (Tiniroto Ecological District, 38° 46′

Table 2 Waikatea Station vegetation types at the time the biodiversity offset proposal was developed (Norton 2007)

Vegetation type	% land area
Exotic pasture	57
Kunzea ericoides shrubland and low forest	23
Poor quality exotic pasture	14
Regenerating Podocarpaceae forest	4
Old growth Podocarpaceae forest	1
Indigenous shrubland	1

S, 177° 29′ E, 80-537 m a.s.l.; Norton 2007). The underlying geology comprises young sedimentary rocks mainly of late Tertiary age, especially sandstone, siltstone, and mudstone. The topography is generally steep, with sharp hill crests separated by incised river systems. Waikatea Station is estimated to receive an annual average rainfall of 1400–1600 mm, with most rain falling in winter, while summers can be dry, although drought is usually not a problem. From a farming perspective, Waikatea Station is considered a well balanced property. In 2004, the property wintered 19,000 stock units (43% sheep and 57% cattle).

The most widespread vegetation type on Waikatea Station is pasture (Table 2), dominated by exotic grass and herb species (Norton 2007). However, 29% of the property supports indigenous forest and shrubland (mainly dominated by *Kunzea ericoides*) much of it of recent origin having established on areas that were previously under pasture. Indigenous forest and shrubland is heavily undergrazed by farmed cattle and sheep, and feral goats. The dominant understorey plants are species of low palatability, while palatable understorey species, including seedlings and saplings of most of the canopy dominants, are rare or absent. Undergrazing is used as part of farm management, especially during winter when feed is in short supply. Under this regime, forest regeneration is unlikely and canopy collapse is possible once the current seral canopy *Kunzea ericoides* start to senesce.

In November 2004 the Bayly Trust, who own Waikatea Station, applied to Wairoa District Council for resource consent to clear 536 ha of *Kunzea ericoides* shrubland and low forest for pasture reestablishment, while protecting a further 674 ha of forest remnants and riparian zones. Following the resource consent hearing at which the Department of Conservation (DOC, a central government agency which manages public conservation land and advocates for preservation on private land) opposed the application, the Council granted consent in March 2006 which, subject to conditions, authorized the clearance of 356 ha of *Kunzea ericoides*. DOC then appealed this decision to the Environment Court which heard the case in July/August 2007. A revised proposal involving the clearance of 354 ha of *Kunzea ericoides* shrubland and low forest for pasture development, and protection through covenanting and fencing of a further 799 ha of forest and shrubland as a biodiversity offset was put to the Environment Court at this hearing. Although DOC expert witnesses at the hearing claimed that the project, including the offset proposal, would result in a net loss of biodiversity on the property, the Court accepted expert evidence that there would in fact be a net-gain in biodiversity because of the removal of grazing animals from the 799 ha to be protected and granted consent for the revised proposal (Environment Court decision W081/2007, 19 September 2007).

The biodiversity offset proposal accepted by the Court involved:

- Permanent protection of 799 ha of indigenous forest and shrubland, together with some areas of pasture (primarily riparian areas), through a QEII National Trust Open Space Covenant (www.openspace.org.nz) on the property title.
- Removal of domestic grazing pressure from all protected areas through the establishment of new fencing and the repair of existing fencing, and then the removal of all domestic grazing animals.
- Active control of feral grazing and browsing animals especially goats and brushtail possums.
- Monitoring of biodiversity values.
- Natural regeneration of pasture areas included within the covenanted and fenced area once they have been retired from grazing.

The areas selected for protection and fencing were chosen to be (Norton 2007):

- Inclusive of all remaining areas of remnant old growth forest.
- Fully representative of the range of environments that occur on Waikatea Station (especially with respect to altitude, aspect and landform).
- Large enough to be well buffered and have good resilience (the ability to recover from natural disturbances).
- Provide connectivity between protected areas, and with other areas of indigenous forest outside the property, both for aquatic and terrestrial biota.
- Provide habitat for nationally uncommon species, especially fauna.

Framework for Assessing Biodiversity Offsets

While substantial biodiversity offsets were approved as part of the regulatory process in the case studies, the manner in which they were developed was based more

around the precautionary principal than from the application of a formal assessment framework. Given the increasing uptake of biodiversity offsets internationally (ten Kate and others 2004) it is important that the merits of individual proposals are rigorously assessed against an appropriate framework. The recent literature on biodiversity offsets provides the basis for such a framework. Based on both the case studies and this literature, a preliminary framework of key environmental principles, which should be considered in developing and evaluating biodiversity offsets, is now proposed.

The six principles fall into two groups; the first two are primary socio-economic principles, in that they are concerned with the process by which offsets are considered and implemented while the remaining four are primarily ecological, as they are concerned with the selection and quantification of offsets. Notwithstanding this distinction, all six principals are relevant for both the design of offsets (a largely ecological process) and their approval and implementation within regulatory frameworks (a regulatory/policy process).

Principle One

Biodiversity offsets should only be used as part of an hierarchy of actions in which a development project must first seek to avoid impacts and then minimize the impacts that do occur (ten Kate and others 2004; Moilanen and others 2008). Offsets are an activity that compensates for the residual, unavoidable impacts (harm) after avoiding and minimizing as much as possible.

The use of such an hierarchical approach explicitly places biodiversity offsets within a broader context of responsible development. A development project must first seek to avoid any adverse impacts, or when these are unavoidable, it should seek to minimize such impacts. Only when these steps have been addressed and there is still residual impact (e.g., through vegetation clearance), can offsets be considered as a compensation mechanism. Biodiversity offsets should not be used to justify adverse impacts; rather they are the final step in a process that focuses first on avoidance and minimization. However, the way in which such an hierarchy is used will necessarily reflect the local policy/regulatory situation and there may be cases where a favorable offset might be accepted where the "avoid" option is less attractive on social or economic grounds.

In the Kate Valley case, a rigorous process was undertaken to identify the best site for the regional landfill that had to meet geotechnical, logistical, and environmental concerns (including avoiding damaging or destroying significant indigenous habitat). While no single site could totally avoid all impacts, the Kate Valley site was considered the best. The Waikatea situation was more complex as the land owner was restricted to the one location and wished to increase the area of pasture. This meant that "avoidance" was not possible in terms of clearance of indigenous vegetation. However, the direct impacts of clearance were minimized by ensuring that the areas that were not to be cleared (the offset) would offer the best outcome for the sustainable conservation of indigenous biodiversity on the property.

Principle Two

Some form of guarantee must be provided that the offset proposed will occur (Race and Fonseca 1996; Harper and Quigley 2005; Gibbons and Lindenmayer 2007; Matthews and Endress 2008).

One of the major criticisms of offsets, especially in North America, is that most approved offsets fail to meet their objectives or never actually occur (e.g., Race and Fonseca 1996; Matthews and Endress 2008; Harper and Quigley 2005). In approving biodiversity offsets as part of economic development projects, consenting authorities must ensure that adequate systems are put in place to ensure that compliance does occur. Furthermore these systems must be robust enough to take into account the time-lags that are likely to occur in achieving a desired offset outcome (see principle six).

In New Zealand, the Environment Court will usually include specific conditions relating to biodiversity offsets that must be met prior to a development project commencing and, in some cases, to enable its continuation. In both the Kate Valley and Waikatea Station cases this included requirements for covenanting, cessation of grazing and management plan development (Kate Valley only) prior to commencement of development work. However, the biggest weakness in ensuring that offset conditions are enforced is a lack of relevant expertise within consenting authorities to monitor offset projects. While a guarantee is important from the developer, there also needs to be the ability to enforce the offset requirements to ensure that the proposed outcomes are actually realized.

Principle Three

Biodiversity offsets are inappropriate for certain ecosystem (or habitat) types because their rarity or the presence of particular species within them makes the clearance of these ecosystems inappropriate under any circumstances (Gibbons and Lindenmayer 2007).

Notwithstanding the hierarchy in principle one, it seems clear that there are some ecosystems or habitat types for which offsets are never going to be possible. These may be ecosystems that have already been diminished to such an

extent that any further loss is unacceptable, or habitats of species whose loss would most likely lead to the extinction of the species as well. In the United States, the Endangered Species Act 1973 imposes specific requirements on developers to avoid impacting on listed species (Stokstad 2005). There may also be situations where the impact of a development will have adverse off-site effects, for example, through alteration of ecological processes (e.g., hydrological regimes) which results in further habitat loss and/or species extinction at other sites. Specific thresholds to trigger this principle will vary depending on the local situation but may include the presence of species listed as nationally threatened or of habitats that have less than a particular percentage of their total area remaining (e.g., <10%).

In New Zealand, published lists of threatened species and habitats (de Lange and others 2004; Walker and others 2005) provide a framework for the Environment Court to consider if clearance is permissible, but there is no statutory basis for restricting development as is the case with the Endangered Species Act. In both the Kate Valley and Waikatea cases, the Environment Court determined, based on detailed ecological evidence, that while indigenous biodiversity would be lost, it was not of such value that clearance was inappropriate. In the Kate Valley case, the Court determined that the remnant old growth forest was not significant, while in the Waikatea case, the Court concluded that while the indigenous vegetation proposed for clearance was significant, the effects of the proposed clearance were not sufficient to justify refusal of the application given the nature of the offset proposed.

Principle Four

Biodiversity offsets can involve protection of existing habitat but most often involve the creation of new habitat, especially when existing habitat already enjoys a degree of protection (Gibbons and Lindenmayer 2007).

While a biodiversity offset might involve the protection of an area of intact indigenous vegetation, offsetting normally involves the restoration and protection of new areas/habitats. In North America, wetland mitigation has focused primarily on creating new wetlands to offset impacts on existing wetlands (Zedler 1996; Race and Fonseca 1996; Matthews and Endress 2008), and this is also the case in the United Kingdom (Morris and others 2006). While it might be possible to include the protection of an existing area of indigenous habitat from clearance, the concept of "duty of care" (Gibbons and Lindenmayer 2007) means that this approach may still result in a net-loss of habitat if there are already mechanisms in place to limit the loss of the offset area (e.g., through local or regional plans). However, the use of existing indigenous habitat for offsets might be appropriate where "protection" results in a significant improvement in "condition" over what is the current or likely future condition.

In both the Kate Valley and Waikatea cases the biodiversity offset involved both the protection of existing habitat and the creation of new habitat, although the relative importance of these differed. At Kate Valley, the 410 ha Tiromoana Bush restoration area is a mixture of pasture (57 %), and indigenous shrubland and low forest (43 %). In contrast at Waikatea Station, the 799 ha offset area is predominantly indigenous shrubland and forest (79 %), with a much smaller area of pasture (21 %). However, in both cases, the "health" of the existing habitat is severely degraded because of the pervasive impacts of domestic and feral grazing and browsing mammals, a major problem in many New Zealand forests (Wardle and others 2001; Coomes and others 2003; Smale and others 2008), and it is likely that these animals will continue to suppress any palatable plant species, including forest canopy regeneration, resulting in nonreversible forest degradation. Thus the offset proposal will result in a significant improvement in the condition of the existing habitat because of the exclusion and control of invasive mammals.

Principle Five

A clear currency is required that allows transparent quantification of values to be lost and values to be gained in order to ensure ecological equivalency between cleared and offset areas (Salzman and Ruhl 2000; McCarthy and others 2004; ten Kate and others 2004; Morris and others 2006; Gibbons and Lindenmayer 2007; Moilanen and others 2008).

Any biodiversity offset proposal must be founded on very good knowledge of the biodiversity values of both the site that is to be impacted and the offset site, including composition, structure and pattern, function, and dynamics and resilience of the system (Hobbs and Norton 1996). The development of a clear currency to quantify the values at different sites being considered as part of biodiversity offsets is essential to ensure that clearance of high quality habitat or a rare ecosystem is not offset using an area of low quality habitat or common ecosystem and thus that biodiversity offsets have credibility.

A range of approaches to optimising conservation outcomes at the landscape scale have been proposed (Pressy and others 2007; Wilson and others 2007; Kremen and others 2008) and provide the opportunity to ensure that the location of offset sites are optimized to ensure that there is no-net-loss or even a net-gain in biodiversity. However, to utilize these tools as part of offset development, good quantitative knowledge of the biodiversity values present

both within the target sites and at other sites within the broader landscape is required.

A clear currency is also essential if there is to be any objective determination of appropriate offset ratios (Gibbons and Lindenmayer 2007). While a number of metrics have been proposed (e.g., Parkes and others 2003; McCarthy and others 2004; Bruggeman and others 2006), the size of offsets has usually been based on subjective judgments (Morris and others 2006). The development of appropriate ratios for compensation may be important if there is to be a fair exchange of areas, but any such assessment must take into account the uncertainties discussed below (Moilanen and others 2008).

In both the Kate Valley and Waikatea Station cases, the offset areas are located adjacent to the clearance areas and involved the same ecosystem types. Detailed ecological information (species lists, community comparisons, quantification of historical ecosystem change, and regional analyses of habitat types) was presented to the Environment Court which enabled the Court to reach conclusions on the relative merit of the biodiversity offset proposed, although no formal offset ratio was proposed or optimization approach used in determining the outcome.

Principle Six

Determination of what is an appropriate offset must take into account both the uncertainty involved in obtaining the desired outcome for the offset area and the time-lag that is often involved in reaching this point (Zedler 1996; Hilderbrand and others 2005; Morris and others 2006; Moilanen and others 2008).

Uncertainty relates primarily to the inability of ecologists to accurately predict what a system will be like at some point in the future as a result of management actions implemented as part of the offset (e.g., restoration). Uncertainty is particularly high where offsets involve restoration of significantly modified sites (e.g., abandoned farmland) or where there are strong abiotic drivers of ecosystem processes that need to be reversed (e.g., disturbance regimes or hydrological factors) and there is no guarantee that the desired outcome will be achieved (Hilderbrand and others 2005). Uncertainty will be less where the offset involves, for example, the removal of a degraded influence, such as an herbivore or predator, in an otherwise intact ecosystem. However, uncertainty is exacerbated by the extinction debt associated with past and current habitat loss (Tilman and others 1994; Schrott and others 2005) which makes it difficult to predict future condition in highly fragmented landscapes irrespective of the development and associated offset proposal.

Offsets also need to allow for the delayed time that is involved in achieving the desired biodiversity outcome, especially when the economic development will be yielding economic benefits in a much shorter time frame than the ecological changes will be occurring over. Uncertainty and time-lags also present challenges for consenting authorities who need to factor these into the conditions that are imposed as part of a development consent—for example, the time period over which a bond might need to be held or the procedures that are established to monitor compliance.

One way to overcome uncertainty is through the use of biodiversity banks. These involve a third party owning an area that has been restored, established, enhanced, or (in certain circumstances) preserved for the purpose of trading with a developer who requires an offset as part of a development project. Wetland mitigation banks have been used extensively in the United States (Weems and Canter 1995) and enable a developer to purchase an offset prior to undertaking their development work, thus reducing some of the uncertainties associated with establishing a new offset. Bonnie (1999) suggests a similar approach for offsetting unavoidable adverse impacts on endangered species habitat, while habitat banks fulfill a similar function in Europe (Morris and others 2006).

In the Kate Valley and Waikatea Stations cases, two main areas of uncertainty were identified; (1) that the remnant indigenous forests will regenerate once the degrading influences had been removed, and (2) that natural regeneration and/or restoration plantings will be successful in re-establishing self-sustaining indigenous forest ecosystems in pasture areas. Both of these were addressed during the Environment Court process with ecological evidence presented to show that both were unlikely to be a major issue based on previous New Zealand research (Reay and Norton 1999; Dodd and Power 2007). The Court took this evidence into account in reaching its decision on the appropriate offset.

Conclusions

The environmental framework presented here provides a basis for assessing the potential usefulness of biodiversity offsets as a policy instrument in sustainable development and should assist both those developing offset proposals and consenting authorities evaluating such proposals. While there are instances where biodiversity offsets are going to be totally inappropriate (Gibbons and Lindenmayer 2007), offsets are likely to be increasingly used as people strive to meet environmental and social, as well as economic, standards in project development. The six principles outlined here provide a framework for both developing and assessing future biodiversity offset proposals, although they do not provide guidance on

determining specific offset ratios (Moilanen and others 2008).

While it is possible to undertake detailed assessment of the values present at both the impact and offset site, the lack of any guarantee that an offset proposed will be realized is a significant problem with biodiversity offsets worldwide (Race and Fonseca 1996; Harper and Quigley 2005; Gibbons and Lindenmayer 2007; Matthews and Endress 2008). It is essential that when a condition requiring biodiversity offsetting is included when permitting a project development, that consenting or decision-making authorities should also ensure that the biodiversity offsetting work is substantially implemented prior to that development work commencing. In the Kate Valley case, this was done with a requirement for the completion of certain activities prior to any refuse being taken to the landfill. Ensuring that such enforceability is built into offset proposals is likely to be the biggest challenge for the future application of biodiversity offsets and it is beholden on the developer as well as regulatory authorities to ensure that workable methods for doing this are put in place. However, to be enforceable, consenting authorities need to have the relevant expertise to monitor offset projects.

The determination of appropriate offset ratios is likely to become an increasingly important part of biodiversity offsetting. However, the use of such ratios needs to be balanced by the need to ensure that solutions are appropriate to the local (country or region) situation, both in terms of biodiversity and social context. A degree of flexibility, but based on the precautionary principle, operating within a sound environmental framework (as outlined here) is likely to result in better biodiversity outcomes than adherence to a rigid offset ratio that might not be appropriate in every situation. However, it is likely that because of the uncertainties in future outcomes (e.g., Zedler 1996; Hilderbrand and others 2005; Morris and others 2006; Gibbons and Lindenmayer 2007) high offset ratios may be required in many instances to guarantee a robust fair exchange (Moilanen and others 2008).

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Responses to Letter from Coastal Conservancy, dated August 4, 2010, entitled "Subject: Comments on Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Final EIS/EIR."

F07. Letter from California State Coastal Conservancy, dated August 4, 2010

1.0 Introduction

In summary, the Coastal Conservancy's letter refers to the Conservancy's acquisition of Santa Clara River Parkway properties, located in Ventura County; it expresses concerns over indirect and cumulative impacts from the proposed Project; and it states that the Final EIS/EIR did not adequately address various issues identified below.

2.0 Response

2.1 Santa Clara River Parkway Properties

The comment states that the downstream location of the Santa Clara River Parkway properties "makes them particularly susceptible to various indirect and cumulative impacts" from the proposed Project and requests that the Corps carefully consider such potential project impacts and suitable avoidance and mitigation as part of its regulatory review process.

Response: As explained below, neither the proposed Project nor any alternative would result in impacts to the Parkway properties, which are located beyond the Project's boundary and downstream in Ventura County.

First, this comment is similar to one made in the letter from the Los Angeles Regional Water Quality Control Board, dated August 3, 2010 (Letter F06). The Regional Board raised concerns regarding the Santa Clara River Parkway properties. As explained in response to the Regional Board's letter, the Parkway properties are located approximately 4.4 miles from the western boundary of the Project site at the Los Angeles County/Ventura County line, and there are no Project-related impacts at those points downstream of the Project site.

As background, based on a review of the "Santa Clara River Parkway Floodplain Restoration Feasibility Study" prepared for the Coastal Conservancy by Stillwater Sciences, dated July 2008 (see **Attachment F06-8** to these responses for a copy of the Feasibility Study), the Santa Clara River Parkway project seeks to ameliorate historical impacts in the lower Santa Clara River and conserve existing riparian habitats by acquiring and restoring existing habitat and flood-prone property from "willing sellers." (Feasibility Study, p. v.) The Feasibility Study was undertaken to assist with the acquisition, management, and eventual restoration of lands within the Parkway project. According to the Feasibility Study, page 1-1, the "primary goal of the Parkway is to create, protect, and restore 25 miles of continuous river and floodplain corridor from the mouth of the Santa Clara River to the Sespe Creek confluence," which is approximately 13.4 miles from the western boundary of the Project site at the Los Angeles County/ Ventura County line. (Feasibility Study, p. 1-1.)

The Parkway project extent encompasses a "25-mile reach of the lower river from the mouth to the Sespe Creek confluence." (Feasibility Study, p. 1-4, Figure 1-2.) However, the Feasibility Study included both the Parkway project extent, as defined, as well as "the reach from Sespe Creek upstream to the Los Angeles/Ventura County line." (*Id.*) The Feasibility Study defined its "area of analysis" by reference to the extent of the 500-year floodplain, and stated this area of analysis "includes the lower portions of the three major tributaries: Piru, Sespe, and Santa Paula creeks." (*Id.*) The eastern-most portion of this "area

of analysis" is the Piru Creek confluence, which is approximately 4.4 miles from the Project boundary at the Los Angeles County/Ventura County line.

In describing the wide variety of physical and ecological conditions that occur in the River, the Feasibility Study determined "it was useful to subdivide the lower Santa Clara River into 12 reaches (numbered from downstream to upstream)," based on physical, biological, and other criteria. (Feasibility Study, p. 1-4, Table 1-1.) The eastern-most, upstream reach is identified as "Reach 11." (Feasibility Study, p. 1-7, Table 1-1.) Reach 11 is approximately 4.4 miles in length from its start point in the vicinity of the Piru Creek confluence to its end point at the Los Angeles County/Ventura County line. (*Id.*) Much of the land within this reach of the River Corridor is owned by the Project applicant (Newhall), and the applicant is not currently a "willing seller" of its Ventura County landholdings within Reach 11, and one of the important predicates of the Parkway project is to acquire property within the River Corridor from "willing sellers." (Feasibility Study, p. v.) The Conservancy has acquired property within Reach 11 just upstream of the Piru Creek confluence.

The Sikand 2000 study, which is part of the EIS/EIR record, has addressed increased runoff from the Specific Plan site, and has estimated that such impacts vary based on the flow frequency and distance downstream from the Project boundary. For example, for the 2-year flow, impacts dissipate at approximately 2.1 miles downstream of the Project boundary (*i.e.*, Los Angeles County/Ventura County line). For the 100-year event, this point lies 3.2 miles downstream of the Project boundary. In addition, the hydromodification analyses in **Section 4.2**, Geomorphology and Riparian Resources, and the Geosyntec equivalency evaluation found in **Appendix F4.4** of the Final EIS/EIR show that no adverse impact to the Santa Clara River would occur as a result of the build-out of the Specific Plan with implementation of the site design/LID strategies and hydromodification control, source control, and treatment control project design features included in the Newhall Ranch Sub-Regional Stormwater Mitigation Plan. The Corps' draft least environmentally damaging practicable alternative (Draft LEDPA) has also avoided and minimized impacts to the Santa Clara River when compared to the proposed Project (Alternative 2). As a result, the Draft LEDPA would not result in any impacts to the Santa Clara River Parkway project properties. Finally, the Corps also is continuing to evaluate further avoidance and minimization of impacts to waters of the United States in response to comments received on the Final EIS/EIR. Please refer to the Corps' final 404(b)(1) alternatives analysis, which identifies the final LEDPA. The final LEDPA is to be completed by the Corps and will be included in the Record of Decision. Please refer to the Corps' Record of Decision, which summarizes the final LEDPA and includes as **Appendix A** the Corps' final 404(b)(1) alternatives analysis.

2.2 Exploration of Avoidance in Alternatives Analysis

The comment states that while the alternatives analysis in the Final EIS/EIR is an improvement over the Draft EIS/EIR, particularly with respect to the inclusion of the Draft LEDPA, there is still "inadequate exploration of practicable avoidance measures in the alternatives considered." The comment strongly recommends that the Final LEDPA include additional avoidance measures, particularly avoidance of the proposed creek and wetland fill in Potrero Canyon and avoidance of the 100-year floodplain (as in Alternative 7).

Response: The Corps and CDFG evaluated a broad range of resource avoidance alternatives in the Final EIS/EIR and the Corps' draft 404(b)(1) alternatives analysis. In addition, the Corps considered the no action/no project alternative (Alternative 1); 100-year floodplain avoidance alternative (Alternative 7);

"No Fill" alternative (Alternative 8), and a variety of drainage-specific avoidance alternatives in its evaluation of the applicant's draft 404(b)(1) alternatives analysis. This draft analysis assessed a range of alternatives, including various drainage-specific avoidance alternatives in the context of identifying a Revised Draft LEDPA and Draft LEDPA. (See Final EIS/EIR, **Section 3.0**, Description of Alternatives; and **Section 5.0**, Comparison of Alternatives; as well as the Corps' draft 404(b)(1) alternatives analysis found in **Appendix F1.0** of the Final EIS/EIR, which includes the applicant's draft 404(b)(1) alternatives analysis ["applicant's draft analysis"].)

As to the drainage-specific avoidance alternatives, the applicant's draft analysis identified and evaluated four different partial and full avoidance sub-alternatives or "special studies" specific to the Potrero Canyon drainage area. Potrero Canyon's four sub-alternatives were identified as PC-1 (Revised Initial LEDPA), PC-2 (Revised Additional LEDPA Plus Additional Avoidance), PC-3 (Avoidance Plus Grade Stabilization), and PC-4 (No Fill). (See applicant's draft analysis, pp. 10-7 through 10-11.) The applicant's draft analysis determined that Potrero Canyon sub-alternative PC-1 (Revised Initial LEDPA) would be cost practicable and meet the overall project purpose. However, the analysis also found that the other Potrero Canyon sub-alternatives (PC-2 through PC-4) would not meet the overall project purpose because of the loss of developable acreage, and because of cost impracticability. The Corps considered this analysis in preparing the Corps' draft 404(b)(1) alternatives analysis (see Final EIS/EIR, **Appendix F1.0**).

In response to comments on the Final EIS/EIR, and, in particular, comments from USEPA and Regional Board, the Corps sent a letter to the applicant on September 27, 2010, requesting additional information for the Corps' final 404(b)(1) alternatives analysis and compensatory mitigation program. In that letter, the Corps requested that the applicant respond to comments regarding the practicability of additional avoidance of permanent impacts to waters of the United States, including wetlands, in the Potrero Canyon drainage area.

Responding to the Corps' directive, the applicant further analyzed the practicability of avoiding impacts to jurisdictional wetlands in the middle reach of Potrero Canyon. In conducting the additional analysis, the applicant prepared three new Potrero Canyon sub-alternatives: PC-2b, PC-2c, and PC-4b.

Sub-Alternative PC-2

As background, the Potrero Canyon sub-alternative PC-2 (addressed in the applicant's draft analysis, found in **Appendix F1.0** of the Final EIS/EIR) achieved greater avoidance of fill of waters of the United States by using a "soil treatment" method (*i.e.*, grouting of the soils to achieve compaction). However, this method was significantly more expensive and required development setbacks from the avoided jurisdictional waters. In the applicant's view, this combination of additional cost and reduced development due to the setback rendered PC-2 impracticable.

As stated, the applicant then prepared three additional Potrero Canyon sub-alternatives: PC-2b, PC-2c, and PC-4b. These three sub-alternatives were evaluated in the "supplement" to the applicant's draft 404(b)(1) alternatives analysis. (A copy of the applicant's supplement is included as **Attachment F06-1** to these responses.)

New Sub-Alternative PC-2c

Starting first with PC-2c, the applicant used a geotechnical mitigation option referred to as the "temporary surcharge" method. This method would result in the placement of fill on the unstable soils in development areas for a specified time period, and then the fill would be removed once the soil has been compacted (*i.e.*, the weight of the soils compacts the underlying unstable soils). PC-2c also would replace the existing designated development in the middle reach of Potrero Canyon with open space (*i.e.*, Specific Plan golf course), and, in doing so, would reduce costs compared to original PC-2 because portions of the newly designated golf course area would not require the geotechnical mitigation. Further, PC-2c would increase development compared to the original PC-2 sub-alternative because the new option (PC-2c) would place residential development in the area formerly approved for Specific Plan golf course use, located primarily on the east end of Potrero Canyon. Compared to the Draft LEDPA, this new sub-alternative (PC-2c) would reduce permanent impacts to waters of the United States by 7.4 acres, including 2.9 acres of special aquatic sites, and it would avoid the cismontane alkali marsh (CAM) in the middle reach of Potrero Canyon.

Comparing PC-2c with the Draft LEDPA within the Potrero Canyon study area and taking into account impacts/additional avoidance by acreage, loss of development, costs, and site-wide effects, the supplement to the applicant's draft analysis has determined that, although PC-2c would reduce impacts to aquatic resources, including special aquatic sites, it was not a practicable alternative based on additional direct costs and net developable acreage cost increases. Nonetheless, the Corps is conducting a further evaluation of avoidance alternatives, including PC-2c, in the Corps' final 404(b)(1) alternatives analysis. Please see **Appendix A** to the Corps' Record of Decision.

New Sub-Alternative PC-2b

In addition, the applicant has assessed new Potrero Canyon sub-alternative PC-2b. This assessment was in response to USEPA's request for further avoidance in Potrero Canyon using alternative geotechnical methods. Sub-alternative PC-2b is basically the same land use plan as the original PC-2; however, this sub-alternative would implement the "temporary surcharge" method, which avoids the extremely high costs associated with soil treatment methods; however, additional grading costs would be incurred to replace and remove the temporary soils needed to stabilize the underlying soils for development purposes. The "temporary surcharge" method also would require that all development be setback from avoided waters due to County building and safety requirements. Using the "temporary surcharge" method, Potrero Canyon sub-alternative PC-2b would avoid waters of the United States to a slightly greater degree than the avoidance under the original PC-2, with lower direct costs. However, PC-2b would reduce developable acreage when compared to the Draft LEDPA. Because of the combination of increased costs and reduced development, the applicant has determined that PC-2b would not be practicable because it would not meet the overall project purpose or cost criterion used by the applicant. Nonetheless, the Corps is conducting a further evaluation of avoidance alternatives, including PC-2b, in the Corps' final 404(b)(1) alternatives analysis. Please see **Appendix A** to the Corps' Record of Decision.

New Sub-Alternative PC-4b

In addition, the applicant has evaluated Potrero Canyon sub-alternative PC-4b. Under PC-4b, the applicant evaluated whether the open space within Potrero Canyon could accommodate additional acreage for residential and commercial uses. Under the original PC-4, the approximate 455 acres of open space in

Potrero Canyon consists of the Southern California Edison right-of-way, manufactured slopes between development parcels, the avoided Potrero channel, water quality basins, and a 140-acre golf course. Under the new sub-alternative PC-4b, only the golf course area has the potential to be converted to developable land, because the Potrero channel would be avoided and the other open space components are requirements of any development scenario. If the approved golf course acreage were entirely eliminated and replaced with development, PC-4b would yield approximately 849 net developable acres and avoid all waters of the United States within Potrero Canyon. However, the absence of the golf course under PC-4b would not be consistent with a required element of the approved Specific Plan. The costs to implement PC-4b also would increase and not meet the applicant's cost criterion for a practicable alternative.

As stated above, nonetheless, the Corps is continuing to evaluate avoidance alternatives, including PC-4b, in the Corps' final 404(b)(1) alternatives analysis. Please see **Appendix A** to the Corps' Record of Decision.

The comment also states that avoidance of the 100-year floodplain (as in Alternative 7) would result in "sizeable reductions of significant impacts to jurisdictional waters and wetlands" and other resources, consistent with the overall project purpose. In the EIS/EIR, the Corps evaluated Alternative 7, which avoided all of the 100-year floodplain within the Project area. The Corps determined that Alternative 7 was not practicable because of substantial increases in costs (53 percent more compared to Alternative 2), and because the alternative would not meet the overall project purpose (46 percent reduction in net developable area compared to Alternative 2).

2.3 Proposed Compensatory Mitigation

The comment states that the level of compensatory mitigation currently proposed is inadequate and that there is uncertainty regarding the proposed timing or phasing of certain mitigation measures. The comment states that additional compensatory mitigation should be required at the very beginning of the proposed Project to help ensure that lost resource functions and values are adequately mitigated. The comment also recommends additional compensatory mitigation lands be dedicated or subject to conservation easements within the 500-year floodplain of the River downstream of the Project site.

Response: As part of the project-level sub-notification process, each mitigation project would include the 12 components identified in the 2008 Mitigation Rule. This commitment is reflected in the Final Mitigation and Monitoring Plan, which is included in the Corps' final 404(b)(1) alternatives analysis. For further responsive information, please refer to **Response 2.10** to the letter from USEPA, dated August 6, 2010 (Letter F02).

In addition, at the direction of the Corps, the applicant has modified the draft Mitigation and Monitoring Plan in response to comments on the Final EIS/EIR. The draft plan has been modified to implement the proposed 19-acre compensatory wetland mitigation area in lower Potrero Canyon prior to any permanent impacts to waters of the United States; and, in terms of phasing/scheduling, the 19-acre wetland mitigation in Potrero Canyon would replace the proposed compensatory mitigation areas in Salt Canyon, which would now be implemented in conjunction with later phases of proposed impacts to waters of the United States. With the proposed modification, the initial phase of the proposed compensatory mitigation plan would include the above-referenced 19 acres of compensatory mitigation in Lower Potrero Canyon and 15.9 acres in the Santa Clara River, for a total of 34.9 acres of available compensatory mitigation area

prior to any permanent impacts to waters of the United States. The Corps has determined that the level and timing of compensatory mitigation outlined in the Final Mitigation and Monitoring Plan adequately mitigates any potential lost functions and services.

As to comments concerning the 500-year floodplain, there is no legal mandate to assess proposed development in connection with a 500-year floodplain, but Alternative 7 did avoid all impacts in the 100-year floodplain. As part of the final 404(b)(1) alternatives analysis, the Corps determined that Alternative 7 did not meet the overall project purpose and would not be practicable in light of a substantial increase in cost per net developable acre. There also is no legal basis for the Corps to require additional compensatory mitigation within the 500-year floodplain downstream of the Project boundary, particularly where no downstream impacts were found in that area. For supporting information, please see **Responses 2.1 through 2.3** to letter from Ventura County Watershed Protection District, dated August 2, 2010 (Letter F11); and **Response 2.1 and 2.2** to letter from Ventura County Watershed Protection District, dated August 2, 2010 (Letter F12).

2.4 Subregional Water-Quality Mitigation Plans

The comment expresses concern over the adequacy of the "Sub-Regional and Village-Scale Water Quality Mitigation Plans prepared as part of the EIS/EIR process," citing Table 4.5-15 of the Final EIS/EIR. In addition, the comment requests more "quantitative modeling" of stormwater runoff effects "at the Village-Scale." The comment claims that, even with further analysis, there will be uncertainty about potential for downstream impacts; as such, the comment recommends that additional mitigation be required downstream, in the form of land acquisitions or conservation easements, within the 100-year floodplain of the River between the Project site boundary and confluence of the River with Sespe Creek.

Response: The concern regarding the technical adequacy of the water quality modeling presented in the Subregional Stormwater Mitigation Plan (Plan) is the same as those stated by the Regional Board, which approved the Plan in 2008. Please refer to the Corps' responses to the letter from the Los Angeles Regional Water Quality Control Board, dated August 3, 2010 (Letter F06) for detailed responses regarding the Plan.

The Corps has determined that the comment's recommendation for additional floodplain mitigation downstream is not necessary because the analysis presented in the Plan and EIS/EIR, as well as the Plan's tiered implementation process, provide substantial certainty that there would not be downstream impacts. Further, the existing and future water quality control regulatory framework that governs the Project specifically requires that beneficial uses of the receiving water body (the Santa Clara River) remain intact.

2.5 Project Impacts on Sediment Loading and Beach Replenishment

The comment shares concern previously raised by the Regional Board (comment letter, dated August 25, 2009) as to the uncertainty of potential Project impacts on sediment loading and beach replenishment. Further, the comment questions the analysis used in the Final EIS/EIR in arriving at the estimated sediment yield. According to the comment, due to the uncertainty, more detailed monitoring of mitigation is recommended.

Response: The Corps has evaluated the comment's concern regarding the EIS/EIR's reliance on the estimated sediment yield derived from information provided in the Feasibility Study (see **Attachment**

F06-8 to these responses for a copy of the Feasibility Study). The analysis in the EIS/EIR, however, is more reliant on the area affected by the proposed Project than the sediment yield derived from the Feasibility Study. The Project represents approximately 8.52 square miles (or 0.52 percent) of the 1,626 square mile larger Santa Clara River watershed. Given the scale of the Project, the watershed-based sediment yield derived from the study is generally indicative of the Project area and is suitable for analysis in the NEPA environmental review context.

Using Stillwater's entire watershed suspended sediment estimate of 4.08 million tons, a watershed-wide (1,626 square miles) sediment production rate of 2,512.3 tons per square mile was derived. Stillwater also evaluated historic debris basin activity within the Ventura County portion of the Santa Clara River watershed, which provided sedimentation information more related to the coarser hillslope-produced fraction of sediment than suspended sediment. Stillwater estimated that approximately 27.87 million tons of sediment in total is exported to the Santa Barbara channel annually, or 17,158 tons of sediment per square mile of the entire watershed. Using the same methodology described above to estimate the quantity of suspended sediment that would be reduced by each of the Project alternatives, the total sediment reduction was derived based on the reduction in sediment-producing area. For the proposed Project (Alternative 2), there would be a net reduction of 146,155 tons of sediment per year (originating from the Project area tributaries and Project reach of the Santa Clara River), or approximately 0.52 percent of the total estimated sediment discharge (suspended and coarse sediment load) to the Santa Barbara channel.

Below is a table that summarizes the extrapolated estimates from Stillwater, specific to the analysis presented in the Final EIS/EIR (**Section 4.2**, Geomorphology and Riparian Resources).

Santa Clara River Sediment Production			
Type of Sediment Produced	**Estimate Sediment Yield (tons/sq.mi./yr)**	**Proposed Project Area 8.518 sq. mi. (tons/yr)**	**Percent Reduction of Total Santa Clara River Export (ton/yr)**
Coarse Sediment (Ventura Co. Santa Clara River Debris Basins)	15,988	136,185	0.49%
Suspended Sediment (Warrick, Upper Santa Clara River Watershed)	1,171	9,973	0.04%
Total Sediment Reduction	**17,158**	**146,155**	**0.52%**
Total Santa Clara River Sediment Export (1624 sq. mi.)		**27,865,224**	

As presented in this summary table for the proposed Project (Alternative 2), coarse sediment represents a substantially larger proportion of sediment exported to the Santa Barbara channel than does suspended sediment. These additional data will be incorporated into Revised **Section 4.2**, Geomorphology and Riparian Resources. (Please see the **Addendum** to the Final EIS/EIR for revised **Section 4.2**, Geomorphology and Riparian Resources.)[1]

[1] The Stillwater study (2007) is cited and incorporated by reference in **Response 2.6** to the letter from RWQCB, Los Angeles Region, dated August 3, 2010 (Letter F06).

Because the Project represents such as small proportion of the overall Santa Clara River watershed, and the estimated reduction in sediment exported to the Santa Barbara channel is only 0.52 percent of the total exported, the lead agencies have determined that this potential reduction would be less than significant.

2.6 Comments on the Corps' Regulations

The comment cites five Corps regulations and questions whether sufficient consideration was given to each of the cited regulations.

- As noted by the comment, Corps regulations require that "full consideration and appropriate weight will be given to all comments, including those of federal, state, and local agencies, and other experts on matters within their expertise." (33 C.F.R. § 320.4(a)(3).) As required by Corps regulations and NEPA, the Corps has given full consideration and appropriate weight to all comments on the Draft and Final EIS/EIR, including the comments by the State Coastal Conservancy.

- The comment claims that the Corps' public interest review does not demonstrate that the benefits of the Project outweigh damage to wetlands as required by 33 C.F.R. § 320.4, subdivision (b)(4). The Corps' evaluation of the public interest has continued in response to comments on the Final EIS/EIR. For further responsive information, please see the Corps' final 404(b)(1) alternatives analysis and Record of Decision (ROD). (33 C.F.R. § 325.2, subd. (a)(6) ("ROD shall include the district engineer's views on the probable effect of the proposed work on the public interest . . . .").) As required by Corps regulations, the ROD is not included in a final EIS and may not be signed until 30 days after the notice of availability of the final EIS is published in the Federal Register. (33 C.F.R. App. B to Part 325, § 18.)

- The comment claims that the Project would cause damage to downstream property owned by the Friends of the Santa Clara River and The Nature Conservancy, which pursuant to 33 C.F.R. § 320.4, subdivision (g)(2), would require the Corps to advise Newhall of such damage and inform Newhall of possible alternative methods for protecting its property. This comment does not identify how the Project would damage downstream properties; however, comments by the Friends of the Santa Clara River and The Nature Conservancy were addressed in responses to comments provided by those two organizations with regard to the Draft EIS/EIR. (See Final EIS/EIR, responses to letters from Friends of the Santa Clara River, dated June 11, 2009 (Letter 033) and The Nature Conservancy, dated August 21, 2009 (Letter 041).) As discussed in the responses to the comments from those two organizations, the environmental analysis provided in the EIS/EIR, **Section 4.1**, Surface Water Hydrology and Flood Control, and **Section 4.2**, Geomorphology and Riparian Resources, found that there would be no downstream flooding or sediment transport impacts as such effects would be mitigated on site.

- The comment claims that the Corps has not adequately considered other feasible alternatives that would better restore and preserve natural floodplain functions as required by 33 C.F.R. § 320.4(l)(2). The comment does not identify any other feasible alternatives related to restoring and preserving floodplain functions. As discussed in the Final EIS/EIR, seven alternatives were analyzed, all of which included certain design concepts that would restore and preserve natural floodplain functions. In addition, floodplain avoidance is being further evaluated in the Corps' final 404(b)(1) alternatives analysis, which is included in **Appendix A** of the Record of Decision. Specifically, based on input from CDFG, the Corps is considering an additional step of incorporating increased floodplain

avoidance into the final LEDPA. (See Corps' final 404(b)(1) alternatives analysis, which is found in **Appendix A** to the Corps' Record of Decision.)

- The comment also claims that the Project, if adopted, would eliminate large portions of the 100-year floodplain. For clarification, implementation of the Draft LEDPA would preserve approximately 1,297 acres of the Santa Clara River 100-year floodplain. (See Corps' draft 404(b)(1) alternatives analysis, p. 55.) Geographic Information System (GIS)-supported hydraulic modeling (using a Hydrologic Engineering Centers River Analysis System (HEC-RAS) model, and thus more up-to-date than the FEMA mapped floodplain) conducted to support the Final EIS/EIR (**Figure 4.5-61**) identified 1,408 acres of 100-year floodplain in its existing condition. Therefore, the net reduction of Santa Clara River 100-year floodplain would be approximately 111 acres, which constitutes a one percent impact reduction from the Draft LEDPA as compared to the proposed Project (Alternative 2). (See Corps' draft 404(b)(1) alternatives analysis, p. 55.) In addition, as stated above, floodplain avoidance is being further evaluated in the Corps' final 404(b)(1) alternatives analysis, which is included in **Appendix A** of the Record of Decision. (See Corps' final 404(b)(1) alternatives analysis, which is found in **Appendix A** to the Corps' Record of Decision.)

The comment states that compensatory mitigation appears to be out-of-kind and successful re-vegetation of flood control structures would not be feasible or enforceable, which is inconsistent with 33 C.F.R. § 320.4(r)(2). The primary goal of the overall compensatory mitigation program for the Project is to ensure that there is no net loss of acreage or function and services from implementation of the RMDP. As required by Mitigation Measure BIO-2 in the Final EIS/EIR, the permanent removal of existing habitats in Corps jurisdictional areas in the River and tributaries must be replaced by creating and restoring Corps jurisdictional habitats of similar functions and services. In addition, temporary impacts to Corps jurisdictional areas must be mitigated by restoring the affected areas to the habitat type present prior to impacts. Mitigation Measures SW-6 and SW-7 in the Final EIS/EIR contain provisions regarding off-site mitigation, which would occur in the event that on-site mitigation opportunities are not sufficient to accommodate the mitigation acreage required by Mitigation Measure BIO-2. These measures stipulate that impacts to the Santa Clara River mainstem would be mitigated at off-site locations containing reaches of the river mainstem, and impacts to the River's tributaries would be mitigated at off-site locations containing tributaries to the River. These requirements would ensure that the general types of resources (*i.e.*, river mainstem vs. tributary) impacted are replaced, preserved, or restored, and would prevent net loss of either river mainstem or tributary acreage.

Upon project approval, mitigation measures identified in the Final EIS/EIR and adopted in the Corps' Record of Decision would be enforceable as conditions in the Section 404 permit issued by the Corps. (See 33 C.F.R. § 325.4 ("[d]istrict engineers will add special conditions to Department of the Army permits when such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirement").) Further, upon project approval, CDFG also would adopt a mitigation monitoring or reporting program, pursuant to Public Resources Code section 21081.6, to ensure that the mitigation measures and project revisions that CDFG has adopted to avoid or mitigate significant impacts of the Project are implemented, consistent with CDFG's regulatory jurisdiction under the California Endangered Species Act and California Fish and Game Code section 1600 *et seq.*

2.7 Comments on the 404(b)(1) Guidelines

The comment cites four of the section 404(b)(1) Guidelines regulations and questions whether sufficient consideration was given to each of the cited regulations.

- The comment claims that the Corps has not met its burden to: (1) establish that there are no practicable alternatives, which would have less adverse impacts on the aquatic ecosystem as required by 40 C.F.R. § 230.10(a); and (2) to rebut the presumption that non-water dependent practicable alternatives (i.e. not involving special aquatic sites) are available by clearly demonstrating otherwise as required by 40 C.F.R. § 230.10(a)(3). The Corps has satisfied its obligations under the 404(b)(1) Guidelines by identifying and analyzing a wide range of on-site and off-site alternatives. As discussed in the draft 404(b)(1) alternatives analysis, which was included in **Appendix F1.0** of the Final EIS/EIR, the EIS/EIR initially identified 23 alternative sites within the region that were considered potentially available, and based on initial screening, the EIS/EIR carried forward for additional analysis three off-site alternatives that had the potential to meet most or all of the basic objectives for the Specific Plan. (See Corps' draft 404(b)(1) alternatives analysis, p. 63.) On-site alternatives considered included the No Action/No Project Alternative, Alternatives 3 through 7 discussed in the EIS/EIR, and a total Avoidance Alternative (*i.e.*, complete avoidance of all waters of the United States). (See Corps' draft 404(b)(1) alternatives analysis, pp. 43-53.) Additionally, the Corps' draft 404(b)(1) alternatives analysis considered a Modified Alternative 3, which alternative incorporated additional avoidance of aquatic resources suggested by CDFG to ensure compliance with section 1600 of the California Fish and Game Code and the California Endangered Species Act. (See Corps' draft 404(b)(1) alternatives analysis, pp. 53-54.) Based on the analysis of the above off-site and on-site alternatives in the Corps' draft 404(b)(1) alternatives analysis, the Corps made the preliminary determination that "the presumption that there is a less damaging alternative that would not discharge fill in a special aquatic site has been rebutted." (See Corps' draft 404(b)(1) alternatives analysis, p. 70.) Further, the Corps made the preliminary determination that the Modified Alternative 3 represented the least environmentally damaging practicable alternative (Draft LEDPA). (See Corps' draft 404(b)(1) alternatives analysis, p. 63.) Since release of the Final EIS/EIR, and in response to comments from USEPA, Regional Board, and others, the Corps has requested that the applicant provide additional information for use in the Corps' final 404(b)(1) alternatives analysis and compensatory mitigation program. The Corps' final 404(b)(1) alternatives analysis reflects this new information, which further avoids and minimizes impacts to the aquatic ecosystem as required by the 404(b)(1) Guidelines.

- As correctly stated by the comment, 40 C.F.R. § 230.10, subdivision (b)(1) does not permit the discharge of dredged or fill material if the discharge "[c]auses or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard." As discussed in the Corps' draft 404(b)(1) alternatives analysis, the Corps has made a preliminary determination that the Draft LEDPA would not cause or contribute to violations of any applicable state water quality standard. (See Corps' draft 404(b)(1) alternatives analysis, p. 70.) Development on the Project site would comply with applicable regulatory requirements for both construction and post-development surface runoff water quality and impacts related to the implementation of the Draft LEDPA would be reduced to less-than-significant levels with implementation of identified water quality project design features, regulatory requirements, and mitigation measures. (See Corps' draft 404(b)(1) alternatives analysis, pp. 41, 55.) Additional detailed analysis regarding compliance with applicable state water quality standards is available in the Final EIS/EIR in **Section 4.4**, Water

Quality; **Section 4.2**, Geomorphology and Riparian Resources; **Section 4.5**, Biological Resources; and **Section 4.6**, Jurisdictional Waters and Streams. In addition, the Regional Board is actively reviewing the Project and will be issuing a decision on whether the discharges can be certified under Clean Water Act section 401 process.

- The comment claims that the Project would significantly degrade recreational, aesthetic, and economic values of the Santa Clara River by completely altering the floodplain from its natural state and its historical ecology, which degradation would be prohibited by 40 C.F.R. § 230.10(c)(4). As discussed above, implementing the Draft LEDPA would preserve approximately 1,297 acres of the 1,408 acres of Santa Clara River 100-year floodplain. In addition, impacts to the natural state of the floodplain would be minimal given that the net reduction in floodplain acreage is predominantly comprised of disturbed agricultural land. (See Final EIS/EIR, **Figure 4.5-61**.)

  Based on the analysis in the draft 404(b)(1) alternatives analysis and the Final EIS/EIR, the Corps made a preliminary determination that the Draft LEDPA would not significantly degrade waters of the United States through adverse impacts to recreational, aesthetic, and economic values. (See Corps' draft 404(b)(1) alternatives analysis, p. 71.) As stated, the Corps has continued to evaluate such issues in response to comments on the Final EIS/EIR, and in preparing the Corps' final 404(b)(1) alternatives analysis. As to recreational values, the Project site is on private land where public recreational use of the site is not authorized. The Project would not cause off-site impacts to water quality or hydrologic function that would adversely affect water-related recreation upstream or downstream of the Project area. Further, the Project would not cause significant adverse impacts to aesthetic and economic values of waters of the United States because the Project includes substantial on-site creation and restoration, which would largely replace lost values; and the activities would take place in the context of a master-planned community, which would integrate the resources into the community.

- The comment claims that there are additional practicable steps that could minimize potential adverse impacts, which additional practicable steps would be required by 40 C.F.R. § 230.10(d), including further avoidance/minimization of increased runoff rather than relying on future, unenforceable BMPs; however, the comment does not specifically identify any additional practicable steps. As discussed in the Corps' draft 404(b)(1) alternatives analysis, the Corps made a preliminary determination that appropriate and practicable steps had been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem. (See Corps' draft 404(b)(1) alternatives analysis, pp. 71-75.) With regard to increased runoff, as discussed in the Final EIS/EIR, **Section 4.4**, Water Quality, impacts to water quality would be avoided and minimized with the implementation of BMPs and monitoring required by the Construction General Permit and NPDES requirements. (See Corps' draft 404(b)(1) alternatives analysis, pp. 72-73.) These BMPs are specifically identified in the Final EIS/EIR and required by the applicable mitigation measures. (See Corps' draft 404(b)(1) alternatives analysis, p. 73; see also Final EIS/EIR, **Section 4.4**, Water Quality, p. 4.4-178 (BMPs listed in Table 4.4-12 required by Mitigation Measure WQ-1).) The Corps also is continuing to evaluate further avoidance and minimization of impacts to waters of the United States in response to comments received on the Final EIS/EIR. Please refer to the Corps' final 404(b)(1) alternatives analysis, which identifies the final LEDPA. The final LEDPA is to be completed by the Corps and will be included in the Record of Decision. Please refer to the Corps' Record of Decision, which summarizes the final LEDPA and includes as **Appendix A** the Corps' final 404(b)(1) alternatives analysis.