Appendix 2

Previously Adopted Plans, Mitigation, and Permits/Approvals

Appendix 2A

Newhall Ranch RMDP/SCP, Mitigation Monitoring and Reporting Program

California Department of Fish and Game [sic]

December 17, 2010

MITIGATION MONITORING AND REPORTING PLAN

for the

NEWHALL RANCH RESOURCE MANAGEMENT AND DEVELOPMENT PLAN AND SPINEFLOWER CONSERVATION PLAN

as required by

CALIFORNIA DEPARTMENT OF FISH AND GAME

as lead agency under the

CALIFORNIA ENVIRONMENTAL QUALITY ACT

MITIGATION MONITORING AND REPORTING PLAN

I. INTRODUCTION

This Mitigation Monitoring and Reporting Plan is for the Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan (RMDP/SCP Project or Project). The Mitigation Monitoring and Reporting Plan is also sometimes referred to as the "MMRP" for the RMDP/SCP Project. This MMRP is required by the California Department of Fish and Game (Department or CDFG) as lead agency under the California Environmental Quality Act (CEQA; Pub. Resources Code, §§ 21000, *et seq*.) for the RMDP/SCP Project as analyzed in the joint Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR; State Clearinghouse No. 2000011025). The U.S. Army Corps of Engineers (Corps or ACOE) also was the lead agency for the joint EIS/EIR under the National Environmental Policy Act (NEPA; 42 U.S.C. §§ 4321 *et seq*.). The applicant for the RMDP/SCP Project is The Newhall Land and Farming Company (applicant or Newhall).

This MMRP describes the mitigation monitoring and/or reporting plan for the Newhall Ranch RMDP/SCP Project. The MMRP has been adopted in order to avoid or mitigate significant effects on the environment resulting from the RMDP/SCP Project. It is designed to ensure compliance during implementation of the RMDP/SCP Project. As required by Public Resource Code section 21081.6, subdivision (a)(2), the custodian and location of the documents constituting the record of proceedings for the RMDP/SCP Project are as follows: California Department of Fish and Game, located at 4949 Viewridge Avenue, San Diego, California 92123. All inquiries relating to the record should be directed to the South Coast Region at (858) 467-4201.

II. MONITORING REQUIREMENTS AND PURPOSE

The MMRP for the Newhall Ranch RMDP/SCP Project has been prepared in accordance with CEQA (Pub. Resources Code, § 21081.6) and the State CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000, *et. seq.*). The measures presented below to avoid or mitigate the RMDP/SCP Project's significant effects on the environment are fully enforceable through this plan, the Department's approval of the Master Streambed Alteration Agreement, pursuant to its authority under the Fish & Game Code (see, generally, Fish & G. Code, §§ 1600, *et seq.*), and its permitting authority under the California Endangered Species Act (CESA; Fish & G. Code § 2050 *et seq*.), including issuance of the Incidental Take Permits requested as part of the RMDP/SCP Project.

The County of Los Angeles (County) is the local land use authority that previously approved the Newhall Ranch Specific Plan and the Valencia Commerce Center project. The MMRP identifies several County-adopted mitigation measures for the Newhall Ranch Specific Plan and the Valencia Commerce Center project. These mitigation measures are set forth below and are preceded by "SP," which stands for Specific Plan, or "VCC," which stands for Valencia Commerce Center. The joint EIS/EIR for the RMDP/SCP Project identified these previously-adopted mitigation measures as existing mitigation required to avoid or mitigate various potentially significant impacts identified in the EIS/EIR. The VCC mitigation measures were from the County-certified EIR for the Valencia Commerce Center project. The VCC mitigation measures have been included in this MMRP because the SCP portion of the Project will facilitate development on the VCC project site. The SP mitigation measures were included in this MMRP because the RMDP/SCP Project will facilitate development of the Newhall Ranch Specific Plan.

This MMRP: (a) describes all feasible mitigation measures associated with the RMDP/SCP Project; (b) identifies the applicable "Monitoring Agency" for each mitigation measure; (c) establishes the "Monitoring Requirements;" and (d) provides an administrative procedure for the acceptance of each mitigation measure by including a column for the future listing of the approval/clearance date for each mitigation measure.

III. THE DEPARTMENT'S MITIGATION AUTHORITY

The Department's authority to adopt mitigation related to potentially significant biological and riparian resource impacts is based on its regulatory powers under the California Fish & Game Code (*e.g.*, Master Streambed Alteration Agreement Sections 1603 and 1605, subd. (g), and California Endangered Species Act Section 2081). However, the Department is in a unique position as lead agency for the RMDP/SCP Project, because CEQA does not provide independent legal authority for the Department to impose or otherwise require the applicant to implement feasible mitigation related to impacts that fall *outside* of the Department's regulatory/permitting jurisdiction (see Pub. Resources Code, § 21004). Instead, the Department's statutory authority to impose such mitigation is limited to impacts within its jurisdiction under the California Fish & Game Code. Therefore, for areas outside the Department's jurisdiction, mitigation can only be imposed by another agency with pertinent regulatory authority (*e.g.*, the County with its plenary land use jurisdiction over the entire Project site) or where Newhall agrees to do so in cooperation with the Department for purposes of CEQA.

In this regard, the Department recognizes the County's plenary authority to regulate land use through its police powers granted by the California Constitution, art. XI, § 7, and under several statutes, including the local planning law (Gov. Code, §§ 65100-65763), the zoning law (Gov. Code, §§ 65800-65912), and the Subdivision Map Act (Gov. Code, §§ 66410-66499.37). In acknowledging the County's plenary land use authority, the Department also recognizes that the non-biological mitigation measures identified in the EIS/EIR properly fall within and are subject to the County's authority. To ensure enforcement of all non-biological mitigation measures herein, the Department has obtained the applicant's commitment to carry forward and implement all non-biological resource measures identified in the EIS/EIR; as such, the measures are part of the whole of the action taken by the Department in certifying the EIR and approving the Project under CEQA. The applicant also is committed to carry forward the non-biological mitigation measures as part of the County's processing of the subsequent subdivision maps that implement the Project.

To ensure monitoring consistent with CEQA, the applicant has further agreed to fund the monitoring of all the non-biological mitigation measures identified in the EIS/EIR through the Department's environmental consultant for the Project (Aspen Environmental Group). Aspen will monitor implementation of all of the non-biological mitigation measures identified herein, to be reimbursed at Newhall's expense, until such time as they are incorporated into the County's subdivision map process. The Department's MMRP for the RMDP/SCP Project is consistent in concept with CEQA provisions that contemplate a public agency adopting findings with respect to the significant effects identified in an EIR and mitigation to avoid or substantially lessen such effects (see Pub. Resources Code, § 21081, subd. (a)(1), (2)). Further, the MMRP is consistent in concept with the CEQA Guidelines provision contemplating delegation of monitoring authority under CEQA (see CEQA Guidelines, § 15097, subd. (a)).

IV. APPENDICES

Appendix A: Newhall Ranch Specific Plan EIR and Water Reclamation Plant, Mitigation Monitoring and Reporting Plans

Appendix B: EIS/EIR **Section 4.4** (Water Quality), **Table 4.4-12** (referred to in EIS/EIR Mitigation Measure WQ-1)

Appendix C: EIS/EIR **Section 4.5** (Biological Resources), **Table 4.5-68** (referred to in EIS/EIR Mitigation Measure BIO-2)

Appendix D: EIS/EIR **Section 4.5** (Biological Resources), **Table 4.5-69** (referred to in EIS/EIR Mitigation Measure BIO-4)

Appendix E: EIS/EIR **Section 4.5** (Biological Resources), **Tables 4.5-70** and **4.5-71** (referred to in EIS/EIR Mitigation Measure BIO-22)

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
4.5 Biological Resources			
The Department's authority to adopt mitigation related to potentially significant biological and riparian resource impacts is based on its regulatory powers under the California Fish & Game Code (*e.g.*, Master Streambed Alteration Agreement Sections 1603 and 1605, subd. (g), and California Endangered Species Act Section 2081). For that reason, the Department has elected to begin with the mitigation measures taken from the "Biological Resources" section of the EIS/EIR. **BIO-1.** Mitigation Measures SP-4.6-1 through SP-4.6-16 specify requirements for riparian mitigation conducted in the High Country SMA, Salt Creek area, and Open Area. The RMDP includes requirements for mitigation of both riparian and upland habitats (such as riparian adjacent big sagebrush scrub), and incorporates these Mitigation Measures (SP-4.6-1 through SP-4.6-16). A Comprehensive Mitigation Implementation Plan (CMIP) has been developed by Newhall Land that provides an outline of mitigation to offset impacts described in the RMDP. The CMIP demonstrates the feasibility of creating the required mitigation acreage from RMDP project impacts (see BIO-2). However, the CMIP does not identify mitigation actions specifically for impacts to waters of the United States. But since these waters are a subset of CDFG jurisdiction, the necessary Corps mitigation requirements would be met or exceeded.[1] Detailed riparian/wetlands mitigation plans, in accordance with the CMIP, shall be submitted to, and are subject to the approval of, the Corps and CDFG as part of the sub-notification letters for individual projects. Individual project submittals shall include applicable CMIP elements, complying with the requirements outlined below. The detailed wetlands mitigation plan shall specify, at a minimum, the following: (1) the location of mitigation sites; (2) site preparation, including grading, soils preparation, irrigation installation, (2a) the quantity (seed or nursery stock) and species of plants to be planted (all species to be native to region); (3) detailed procedures for creating additional vegetation communities; (4) methods for the removal of non-native plants; (5) a	CDFG	**Plans Prepared**: Riparian/wetland mitigation plans to be submitted concurrently with applicable sub-notification (CDFG)/construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to riparian/wetland resources. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	

[1] For detailed information concerning the Corps compensatory mitigation program for impacts to waters of the United States, please reference Appendix 11.0 of the Section 404(b)1 Alternatives Analysis, included in Appendix F1.0 of the Final EIS/EIR.

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
schedule and action plan to maintain and monitor the enhancement/restoration area; (6) a list of criteria by which to measure success of the mitigation sites (*e.g.*, percent cover and richness of native species, percent survivorship, establis hment of self-sustaining native of plantings, maximum allowable percent of non-native species); (7) measures to exclude unauthorized entry into the creation/enhancement areas; and (8) contingency measures in the event that mitigation efforts are not successful. I~~ndividual project~~ The detailed wetlands mitigation plans shall also classify the biologi cal value (as "high," "moderate," or "low") of the vegetation communities to be disturbed as defined in these conditions, or may be based on an agency-approved method (*e.g.*, Hybrid Assessment of Riparian Communitie s (HARC)). The biological value shall be used to determine mitiga tion replacement ratios required under BIO-2 and BIO-10. The detailed wetlands mitigation plans shall provide for the 3:1 replacement of any southern California black walnut to be removed from the riparian corridor for individual projects. The plan shall be subject to the approval of CDFG and the Corps and approved prior to the impact to riparian resources. BIO-4 describes that the functions and values will be assessed for the riparian areas that will be removed, and BIO-2 and BIO-10 describe the replacem ent ratios for the habitats that will be impacted.	CDFG	**Plans Prepared**: Riparian/wetland mitigation plans to be submitted concurrently with applicable sub-notification (CDFG)/construction notifica tion (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to riparian/wetland resources. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	
BIO-2. The permanent removal of exis ting habitats in Corps and/or CDFG jurisdictional ~~riparian habitats~~areas in the Santa Clara R ~~r~~iver and tributaries shall be replaced by creating ripar~~ian~~ habitats of similar functions and values/services (see Mitigation Measure BIO-4 and Mitigation Measure SW-3 of **Section 4.6** of the Final EIS/EIR) on the Project site, or as allo wed under Mitigation Measure BIO-10. ~~Riparian habitat meeting success criteria (see BIO-6) in advance of the removal of riparian ha bitat at the construction site shall be in kind and at a 1:1 replacement ratio (except as indicated below). If replacement riparian habitat cannot meet the success criteri a in advance of the Project, the ratios listed below in **Table 4.5-68** will apply.~~ **a.** Permanent impacts to Corps jurisdiction (which is a subset of CDFG jurisdiction) are to be mitigated by initiating mitigation site creation and/or restoration in advance of impacts, to replace the combined loss of acreage, functions, and services at a minimum 1:1 ratio. Initiation of a Corps mitigation site is defined as: (1) completion of site preparation; (2) installation of temporary irrigation; and (3) seeding and/or planting of the mitigation site. For detailed information, please refer to the *Mitigation Plan for Impacts to Waters of the United States* included in the Draft	CDFG	**Plans Prepared**: Habitat restoration plans to be submitted concurrently with applicab le sub-notification (CDFG)/ construction notification (Cor ps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. CDFG approval prior to impact of riparian resources **Field Verification:** Perform monitoring quarterly. Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
404(b)(1) Alternatives Analysis in **Appendix F1.0** of the Final EIS/EIR. ~~The Salt Creek creation and restoration site –~~ The Potrero Canyon CAM creation and restoration site and the Mayo Crossing restoration site (*i.e.*, an existing agricultural field) are considered the initial sites to be implemented prior to Corps jurisdictional impacts by development, thereby establishing upfront mitigation credits. As individual Project components are proposed for construction, consistent with the construction notification, quantities of mitigation acreage required to offset permanent impact acreages shall be calculated and compared to pre-mitigation area credits remaining. A project would not proceed unless adequate mitigation capacity is demonstrated. Temporary impact areas shall be mitigated in place in a manner that restores impacted functions and services as described in the mitigation plan noted above. If upfront compensatory mitigation cannot be achieved, a Corps-approved method would be utilized to determine the additional compensatory mitigation to offset the temporal loss of functions and services not included in the 1:1 mitigation ratio for permanent impacts. These measures satisfy the Corps mitigation requirements for impacts to Corps jurisdictional areas. However, impacts to jurisdictional areas (which include all areas subject to Corps and/or CDFG jurisdiction) are also subject to all of the mitigation requirements for impacts to CDFG jurisdiction, including BIO-2b. **b.** For permanent and temporary impacts to CDFG jurisdiction, consistent with the sub-notification, quantities of mitigation acreage required shall be calculated in accordance with the criteria below: • If suitable mitigation sites have met success criteria (BIO-6) prior to disturbance at the impact site, the mitigation sites shall replace the permanently impacted habitats in kind at a 1:1 ratio. • If a suitable mitigation site has not met success criteria prior to disturbance of the impact site, habitat shall be replaced in kind (tributary for tributary impacts, river for river impacts) according to the replacement ratios specified in **Table 4.5-68**, below. These ratios provide compensatory mitigation for temporal losses of riparian function by considering the existing functional condition of the resources to be impacted, as well as time required for different vegetation types to become established and mature. • If a suitable mitigation site has not been initiated within two years following disturbance of the impact site, but is initiated within five	CDFG	**Plans Prepared**: Habitat restoration plans to be submitted concurrently with applicable sub-notification (CDFG)/ construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. CDFG approval prior to impact of riparian resources **Field Verification:** Perform monitoring quarterly. Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
years following such disturbance, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by **Table 4.5-68**, below, plus 0.5:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated three years after disturbance, the required replacement ratio would be 2.5:1.) • If a suitable mitigation site has not been initiated within five years following disturbance of the impact site, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by **Table 4.5-68**, below, plus 1:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated six years after disturbance, the required replacement ratio would be 3:1.) Where temporary impacts to CDFG-jurisdictional areas are proposed, the mitigation acreage required shall be determined based upon the duration of the proposed construction disturbance and the type of vegetation to be impacted. As individual Project components are proposed for construction, consistent with the sub-notification process, the quantities of mitigation acreage required for temporary impacts to CDFG jurisdictional areas shall be calculated according to the following criteria: • If suitable mitigation sites have met success criteria prior to temporary disturbance at the impact site, the mitigation sites shall replace the temporarily impacted habitats in kind at a 1:1 ratio regardless of the duration of the temporary disturbance. • If the duration of temporary disturbance is less than two years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. • If the duration of temporary disturbance is between two and five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1.5:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. • If the duration of temporary disturbance exceeds five years, and no	CDFG	**Plans Prepared**: Habitat restoration plans to be submitted concurrently with applicable sub-notification (CDFG)/ construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. CDFG approval prior to impact of riparian resources **Field Verification:** Perform monitoring quarterly. Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 2:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. In lieu of the habitat replacement described above and subject to CDFG approval, removal of invasive, exotic plant species from existing CDFG jurisdictional areas, followed by restoration/revegetation, may also be used to offset impacts. If this method is employed, mitigation shall be credited at an acreage equivalent to the percentage of exotic vegetation present at the restoration site. For example, if a 10-acre jurisdictional area is occupied by 10% exotic species, restoration shall be credited for 1 acre of impact. If appropriate, as authorized by CDFG, reduced percentage credits may be applied for invasive removal with passive restoration (weeding and documentation of natural recruitment only). ***Table 4.5-68 is provided as MMRP Appendix C***	CDFG	**Plans Prepared**: Habitat restoration plans to be submitted concurrently with applicable sub-notification (CDFG)/ construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. CDFG approval prior to impact of riparian resources **Field Verification:** Perform monitoring quarterly. Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Annually (by April 1) to CDFG until success criteria are met. Wetlands mitigation plans to CDFG annually.	
BIO-3. Creation of new vegetation communities and restoration of impacted vegetation communities shall occur at suitable sites in or adjacent to jurisdictional areas ~~the watercourses~~ or in areas where bank stabilization would occur. T~~he highest priority vegetation community restoration sites are to be new riverbed and tributary areas created, or disturbed sites impacted, during the excavation of uplands for bank protection/stabilization activities.~~ Locations where the excavation of uplands for bank protection/stabilization results in creation of new, unvegetated riverbed or other disturbance shall receive the highest level of priority for vegetation community restoration. Restoration sites may also occur at locations outside the riverbed where there are appropriate hydrologic conditions to create a self-sustaining riparian vegetation community and where upland and riparian vegetation community values are absent or very low. All sites shall contain suitable hydrological conditions and surrounding land uses to ensure a self-sustaining functioning riparian vegetation community. Candidate restoration sites shall be described in the annual mitigation status report (see BIO-12). Sites will be approved when the detailed wetlands mitigation plans are submitted to the Corps and CDFG as part of the sub-notification letters submitted for individual projects Status of the sites will be addressed as part of the annual mitigation status report and mitigation accounting form agency review. Each ~~revegetation~~ mitigation plan will include acreages, maps and site specific descriptions of the proposed revegetation site, including analysis of soils, hydrologic suitability, and present and future	CDFG	**Plans Prepared**: Vegetation community restoration plans to be submitted concurrently with applicable sub-notification (CDFG)/construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. **Field Verification** : Perform quarterly monitoring until success criteria are met. **Reporting**: Mitigation status report annually (by April 1) to CDFG until success criteria are met; status of sites to be addressed as part of annual mitigation status report and mitigation accounting form agency review.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
adjacent land uses.			
BIO-4. Replacement vegetation communities shall be designed to replace the functions and values of the vegetation communities being removed. The replacement vegetation communities shall have similar dominant trees and understory shrubs and herbs (excluding exotic species) to those of the affected vegetation communities (see **Table 4.5-69** for example of recommended plant species for the River Corridor SMA and tributaries). In addition, the replacement vegetation communities shall be designed to replicate the density and structure of the affected vegetation communities once the replacement vegetation communities have met the mitigation success criteria. ***Table 4.5-69 is provided as MMRP Appendix D.***	CDFG	**Plans Prepared**: Vegetation community restoration plans, including plant spacing specifications, to be submitted concurrently with applicab le sub-notification (CDFG)/ construction notification (Cor ps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. Plant spacing specifications shall be reviewed and approved by CDFG when restoration plans are submitted to the agencies as part of the sub-notification letters submitted to the Corps and CDFG **Field verification** : Perform quarterly monitoring until success criteria are met. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met.	
BIO-5. Average plant spacing shall be determined based on an analysis of vegetation communities to be replaced. The applicant shall develop plant spacing specifications for all riparian vegetation communities to be restored. Plant spacing specifications shall be reviewed and approved by the Corps and CDFG when restoration plans are submitted to the agencies as part of the sub-notification letters submitted to the Corps and CDFG for individual projects or as part of the annual mitigation status report and mitigation accounting form.	CDFG	**Plans Prepared**: Vegetation community restoration plans, including plant spacing specification, to be submitted concurrently with applicab le sub-notification (CDFG)/ construction notification (Cor ps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. **Field Verification** : Perform quarterly monitoring until success criteria are met. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met.	
BIO-6. The revegetation site will be considered "complete" upon meeting all of the following success criteria. In a sub-notification letter, the applicant may request modification of success criteria on a project by project basis. Acceptance of such request will be at the discretion of CDFG and the Corps. 1. Regardless of the date of initial planting, any restoration site must	CDFG	**Revegetation/Restoration Acceptance:** After specified criteria have been achieved. **Field Verification:** Perform quarterly monitoring until success criteria are met. Prepare and submit annual monitoring reports. Field inspect as necessary until	

[2] For detailed information concerning the Corps compensatory mitigation program for impacts to waters of the United States, ple ase reference Appendix 11.0 of the Section 404(b)1 Alternatives Analysis, included in Appendix F1.0 of the Final EIS/EIR.

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
have been without active manipulation by irrigation, planting, or seeding for a minimum of three years prior to Agency consideration of successful completion. 2. The percent cover and species richness of native vegetation shall be evaluated based on local refere nce sites established by CDFG and the Corps for the plant communities in the impacted areas. 3. Native shrubs and trees shall have at least 80% survivorship after two years beyond the beginning of the success evaluation start date. This may include natural recruitment. 4. Non-native species cover will be no more than 5% absolute cover through the term of the restoration. 5. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana*) and any species listed on the California St ate Agricultural list, or Cal-IPC list of noxious weeds will not be present on the revegetation site as of the date of completion approval. 6. Using the HARC assess ment methodology, the compensatory mitigation site shall meet or exceed the baseline functional scores of the impact area in Corps' jurisdictional waters, as described in the Conceptual Mitigation Plan[2] for Waters of the United States. If the compensatory mitigation site cannot meet or exceed the baseline functional score of the impact area in jurisdictional waters of the United States, additional mitigation area would be required to compensate for the functional loss.	CDFG restoration/enhancement success criteria are achieved. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met.		
BIO-7. If at any time prior to Agency approval of the restoration area, the site is subject to an act of God (flood, fires, or drought)) the applicant shall be responsible for replanting the damaged area. The site will be subject to the same success criteria as provided for in BIO-6. Should a second act of God occur prior to Agency approval of the restoration area, the applicant shall coordinate with the Agencies and develop an alternative restoration strategy(ies) to meet success requirements. This may include restoration elsewhere in the River corridor or tributaries.	CDFG	**Revegetation/Restoration Acceptance:** After specified criteria have been achieved. **Reporting**: During restoration, perform quarterly monitoring and report annually (by April 1) to CDFG until success criteria are met.	
BIO-8. Temporary irrigation shall be installed as necessary for plant establishment. Irrigation shall contin ue as needed until the restoration site becomes self sustaining, rega rding survivorship and growth. Irrigation shall be terminated in the fall to provide the least stress to	CDFG	**Plans Prepared**: Vegetation community restoration plans showing temporary irrigation as necessary to be submitted concurrently with applicab le sub-notification (CDFG)/ construction notification (Cor ps) letters for individual	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
plants.	CDFG	projects. **Plans Approved:** Prior to impacts to jurisdictional resources. **Field Verification**: Perform monitoring quarterly. **Reporting**: During restoration, report annually (by April 1) to CDFG until success criteria are met.	
BIO-9. As an alternative to the creation/restoration of vegetation communities to compensate for permanent removal of riparian vegetation communities, in the Santa Clara River, the applicant may control In areas where invasive exotic plant species control is authorized by CDFG within the Upper Santa Clara River Sub-Watershed for a portion of the Santa Clara River mitigation required under BIO-2. The applicant may perform this work or contribute "in-lieu of other riparian habitat mitigation (BIO-2). fees" to the Upper Santa Clara River Arundo/Tamarisk Removal Program to perform this work, if available. The weed control sites shall be selected in a coordinated, logical manner to ensure that giant reed and other invasive weeds are controlled to improve and expand wildlife and endangered species habitat; reduce flooding, erosion, and fire hazards; improve water quality; and potentially increase stream flow/water quantity in the RMDP watercourses. Removal areas shall be kept free of exotic plant species for five years after initial treatment. In areas where extensive exotic removal occurs, revegetation with native plants or natural recruitment shall be documented.	CDFG	**Plans Prepared** : Exotic plant control methods to be submitted concurrently with applicable sub-notification (CDFG) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. **Reporting**: Perform quarterly monitoring and report annually (by April 1) to CDFG until success criteria are met.	
BIO-10. The exotics control program may utilize methods and procedures in accordance with the provisions in the Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Final EIR, dated February 2006, or the applicant may propose alternative methods and procedures for Corps and CDFG review and approval pursuant to a sub-notification letter or annual mitigation status report submittal. Exotic plant species control will be credited at an acreage equivalent to the percentage of exotic vegetation at the restoration site. By example: a 10-acre site occupied by 10% exotic species will be credited for one acre of mitigation. The exotic weed control location will be documented on the annual mitigation status report and mitigation accounting form. If "in-lieu fees" are paid, it will be documented on the annual mitigation status report and mitigation accounting form, along with a reporting of the status of exotic vegetation treatment.	CDFG	**Plans Prepared** : Exotic plant control methods to be submitted concurrently with applicable sub-notification (CDFG)/construction notification (Corps) letters for individual projects or annual mitigation status reports. **Plans Approved:** Prior to impacts to jurisdictional resources. **Reporting**: Perform quarterly monitoring and report annually (by April 1) to CDFG until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
BIO-11. To provide an accurate and reliable accounting system for mitigation, the applicant utilizing the RMDP shall file a mitigation accounting form annually with the Corp s and CDFG by April 1. This form shall document the amount of vegetation planted during the past year, any "in-lieu fees" paid for exotic invasive plant species control, the status of all mitigation credits to date, and any credits subtracted by projects implemented during the past year. The applicant, utilizing the RMDP, shall keep detailed records and provide a mitigation accounting form to the Corps and CDFG annually for review for the life of the permit, or until all credits have been used up for individual projects, and success criteria have been met. The Corps and CDFG shall provide concurrence within 60 days, incl uding written verification for all restoration and weed removal sites that meet the specified performance criteria. Adequate proof of deliver y of applicable reports would be required as well as subsequent notic e to the Agencies requesting surety release.	CDFG	**Plan Requirements:** Mitigation accounting form to be submitted annually by April 1. **Reporting**: Perform quarterly monitoring and report annually (by April 1) to CDFG until success criteria are met.	
BIO-12. An annual mitigation status report shall be submitted to the Corps and CDFG by April 1 of each year until satisfaction of success criteria identified in BIO-6. This report shall include any required plans for plant spacing, locations of candidate restoration and weed control sites or proposed "in-lieu fees," restoration methods, and vegetation community restoration performance standards. For active vegetation community creation sites, the report shall include the survival, percent cover, and height of planted species; the number by species of plants replaced; an overview of the reve getation effort and its success in meeting performance criteria; the method used to assess these parameters; and photographs. For activ e exotics control sites, the report shall include an assessment of weed c ontrol; a description of the relative cover of native vegetation, bare areas, and exotic vegetation; an accounting of colonization by native plants; and photographs. The report shall also include the mitigation accounting form (see BIO-11), which outlines accounting information related to species planted or exotics control and mitigation credit remaining. The annual mitigation and monitoring report shall document the current functional capacity of the compensatory mitigation site using the HARC assessment methodology, as well as documenting the baseline func tional scores of the impact site in jurisdictional waters of the United States.	CDFG	**Plan Requirements:** Mitigation status report to be submitted annually by April 1. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met.	
BIO-13. The mitigation program shall incorporate applicable principles in the interagency Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (60 FR 58605-58614) to the extent	CDFG	**Plan Requirements:** Mitigation plans shall implement the specified requirements.	

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feasible and appropriate, particularly the guidance on administration and accounting. Nothing in the section 404 or section 2081 Permit or section 1605 agreement shall preclude the applicant from selling mitigation credits to other parties wishing to use those permits or that agreement for a project and/or maintenance activity included in the permits/agreement.	CDFG	**Reporting**: Report annually (by April 1) to CDFG until success criteria are met.	
BIO-14. Temporary impacts from construction activities in the riverbed shall be restricted to the following areas of disturbance: (1) an 85-foot-wide zone that extends into the river from the base of the rip-rap or gunite bank protection where it intercepts the river bottom; (2) 100 feet on either side of the outer edge of a new bridge or bridge to be modified; (3) a 60-foot-wide corridor for utility lines; (4) 20-foot-wide temporary access ramps; and (5) 60-foot roadway width temporary construction haul routes. The locations of these temporary construction sites and the routes of all access roads shall be shown on maps submitted with the sub-notification letter submitted to the Corps and CDFG for individual project approval. Any variation from these limits shall be submitted, with a justification for a variation for Corps and CDFG approval. The construction plans should indicate what type of vegetation, if any, would be temporarily disturbed or removed and the post-construction activities to facilitate revegetation of the temporarily impacted areas. The boundaries of the construction site and any temporary access roads within the riverbed shall be marked in the field with stakes and flagging. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside the work area and access roads.	CDFG	**Plans Prepared**: Temporary impact areas to be identified on restoration plans to be submitted concurrently with applicable sub-notification (CDFG)/construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to construction activities. **Field Verification:** Field inspect as necessary throughout construction period. **Reporting**: Prior to and during construction, report annually (by April 1) to CDFG until success criteria are met. Mitigation accounting form to CDFG annually with sub-notification letter.	
BIO-15. All native riparian trees with a three-inch diameter at breast height (dbh) or greater in temporary construction areas shall be replaced using one- or five-gallon container plants, containered trees, or pole cuttings in the temporary construction areas in the winter following the construction disturbance. The mitigation ratios for temporary impacts to vegetation communities are described in BIO-2. The growth and survival of the replacement trees shall meet the performance standards specified in BIO-6. In addition, the growth and survival of the planted trees shall be monitored until they meet the self sustaining success criteria in accordance with the methods and reporting procedures specified in BIO-6, BIO-7, BIO-11, and BIO-12.	CDFG	**Plan Requirements:** Mitigation plans shall include the specified requirements. **Field Verification:** Growth and survival of the planted trees shall be monitored until they meet self-sustaining success criteria. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met.	
BIO-16. Vegetation communities temporarily impacted by the proposed Project shall be revegetated as described in BIO-2. Large trunks of removed trees may also remain on site to provide habitat for	CDFG	**Plan Requirements:** Mitigation plans shall include the specified requirements.	

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invertebrates, reptiles, and small mammals or may be anchored within the Project site for erosion control. To facilitate restoration, mulch, or native topsoil (the top six- to 12-inch deep layer containing organic material), may be salvaged from the work area prior to construction. Following construction, salvaged topsoil shall be returned to the work area and placed in the restoration site. Within one year, the Project biologist will evaluate the progress of restoration activities in the temporary impact areas to determine if natural recruitment has been sufficient for the site to reach performance goals. In the event that native plant recruitment is determined by the Project biologist to be inadequate for successful habitat establishment, the site shall be revegetated in accordance with the methods designed for permanent impacts (*i.e.*, seeding, container plants, and/or a temporary irrigation system may be recommended). This will help ensure the success of te~~mporary~~ mitigation areas. The applicant shall restore the temporary construction area per the success criteria and ratios described in BIO-1, BIO-2, and BIO-6. Annual monitoring reports on the status of the recovery of temporarily impacted areas shall be submitted to the Corps and CDFG as part of the annual mitigation status report (BIO-11 and BIO-12).	CDFG	**Field Verification:** Field inspect as necessary until restoration/enhancement success criteria are achieved. Evaluate progress of restoration activities within one year. **Reporting**: Submit monitoring reports, including mitigation status report, annually (by April 1) to CDFG until success criteria are met.	
BIO-17. Focused surveys for arroyo toad shall be conducted. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails , and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for arroyo toad. The applicant shall contract with a qualified biologist to conduct focused surveys for arroyo toad. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and the Corps. The applicant shall implement measures required by the USFWS Biological Opinion that either supplement or supersede these measures. If arroyo toads are determined to be present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG~~:~~. (1) The applicant shall retain a qualified biologist with demonstrated expertise with arroyo toads to monitor all construction activities in potential arroyo toad habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The	CDFG and USFWS	**Measure Implementation:** Conduct specified arroyo toad surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** During construction, perform daily monitoring. Perform focused surveys for arroyo toad prior to construction (survey mid-winter to early summer) and during construction (monitoring). **Reporting**: Prepare and submit annual monitoring reports (by April 1) to CDFG until success criteria are met. Submit monitoring reports monthly during construction. Submit nocturnal survey reports to CDFG and USFWS if necessary. Submit arroyo toad clearance surveys to CDFG daily during relocation. Submit drift fence/pitfall trap survey reports to CDFG.	

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authorized biologist will be presen t during all activities immediately adjacent to or within habitat that supports populations of arroyo toad. (2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information: a. A detailed description of the arroyo toad, including color photographs; b. The protection the arroyo toad receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act; c. The protective measures being implemented to conserve the arroyo toad and other species during cons truction activities associated with the proposed Project; and d. A point of contact if arroyo toads are observed. (3) All trash that may attract predators of the arroyo toad will be removed from work sites or completely secured at the end of each work day. (4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the U SFWS and the authorized biologist. The applicant shall provide inform ation on the general location of construction activities within habitat of the arroyo toad and the actions taken to reduce impacts to this species. Because arroyo toads may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologists w ill, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on arroyo toads. The goal of this effort is to reduce the level of mortality of arroyo toads during construction. The parties realize that, if arroyo toads are present, complete ~~elimination~~ prevention of all mortality is likely not possible because some arroyo toads may occur anywhere within suitable habitat during any given season; the detection of every indivi dual over large areas is impossible because of the small size, fossorial habits, and cryptic coloration of the arroyo toad. (5) Where construction can occur in habitat where arroyo toads are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the	CDFG and USFWS	**Measure Implementation:** Conduct specified arroyo toad surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** During construction, perform daily monitoring. Perform focused surveys for arroyo toad prior to construction (survey mid-winter to early summer) and during construction (monitoring). **Reporting**: Prepare and submit annual monitoring reports (by April 1) to CDFG until success criteria are met. Submit monitoring reports m onthly during construction. Submit nocturnal survey reports to CDFG and USFWS if necessary. Submit arroyo toad clearance surveys to CDFG daily during relocation. Subm it drift fence/pitfall trap survey reports to CDFG.	

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boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas. (6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any arroyo toads from within the fenced area to suitable habitat outside of the fence. If arroyo toads are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG. (7) Fencing to exclude arroyo toads will be at least 24 inches in height. (8) The type of fencing must be approved by the authorized biologist and the USFWS/CDFG. (9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of arroyo toads may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly. (10) If arroyo toads are found within an area that has been fenced to exclude arroyo toads, activities will cease until the authorized biologist moves the arroyo toads. (11) If arroyo toads are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the arroyo toads. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS. (12) Any arroyo toads found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area. (13) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. (14) Staging areas for all construction activities will be located on	CDFG and USFWS	**Measure Implementation:** Conduct specified arroyo toad surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** During construction, perform daily monitoring. Perform focused surveys for arroyo toad prior to construction (survey mid-winter to early summer) and during construction (monitoring). **Reporting**: Prepare and submit annual monitoring reports (by April 1) to CDFG until success criteria are met. Submit monitoring reports monthly during construction. Submit nocturnal survey reports to CDFG and USFWS if necessary. Submit arroyo toad clearance surveys to CDFG daily during relocation. Submit drift fence/pitfall trap survey reports to CDFG.	

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previously disturbed upland areas designated for this purpose. All staging areas will be fenced within potential toad habitat. (15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times. (16) Drift fence/pitfall trap surveys will be implemented in toad sensitive areas prior to construction in an effort to reduce potential mortality to this species. Prior to any construction activities in the Project area, silt fence shall be installed completely around the proposed work area and a qualified biologist should conduct a preconstruction/clearance survey of the work area for arroyo toads. Any toads found in the work area should be relocated to suitable habitat. The silt fence shall be maintained for the duration of the work activity. (17) The applicant shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when arroyo toads may be present on the access road. Traffic speed should be maintained at 15 mph or less in the work area.	CDFG and USFWS	**Measure Implementation:** Conduct specified arroyo toad surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** During construction, perform daily monitoring. Perform focused surveys for arroyo toad prior to construction (survey mid-winter to early summer) and during construction (monitoring). **Reporting**: Prepare and submit annual monitoring reports (by April 1) to CDFG until success criteria are met. Submit monitoring reports monthly during construction. Submit nocturnal survey reports to CDFG and USFWS if necessary. Submit arroyo toad clearance surveys to CDFG daily during relocation. Submit drift fence/pitfall trap survey reports to CDFG.	
BIO-18. Conduct focused surveys for California red-legged frogs. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for California red-legged frogs. The applicant shall contract with a qualified biologist to conduct focused surveys for California red-legged frogs. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. If present, the applicant shall implement measures required by the USFWS Biological Opinion for California red-legged frog that either supplement or supersede these measures. If present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG: (1) The applicant shall retain a qualified biologist with demonstrated expertise with California red-legged frogs to monitor all construction activities in potential red-legged frog habitat and assist the applicant in	CDFG	**Measure Implementation:** Conduct specified California red-legged frog surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification**: Prior to construction survey (between May 1 and December 1) and during construction perform daily monitoring. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met. Submit survey report to CDFG prior to construction. Submit monitoring plan (if required) prior to construction. Submit monitoring reports monthly during construction.	

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the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of California red-legged frogs. (2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information: a. A detailed description of the California red-legged frogs, including color photographs; b. The protection the California red-legged frog receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act; c. The protective measures being implemented to conserve the California red-legged frogs and other species during construction activities associated with the proposed Project; and d. A point of contact if California red-legged frogs are observed. (3) All trash that may attract predators of the California red-legged frogs will be removed from work sites or completely secured at the end of each work day. (4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the USFWS and the authorized biologist. The applicant shall provide information on the general location of construction activities within habitat of the California red-legged frogs and the actions taken to reduce impacts to this species. Because California red-legged frogs may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on California red-legged frogs. The goal of this effort is to reduce the level of mortality of California red-legged frogs during construction. (5) Work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within	CDFG	**Measure Implementation:** Conduct specified California red-legged frog surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification**: Prior to construction survey (between May 1 and December 1) and during construction perform daily monitoring. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met. Submit survey report to CDFG prior to construction. Submit monitoring plan (if required) prior to construction. Submit monitoring reports monthly during construction.	

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the fenced work areas. (6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any California red-legged frogs from within the fenced area to suitable habitat outside of the fence. If California red-legged frogs are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG. (7) Fencing to exclude California red-legged frogs will be at least 24 inches in height. (8) The type of fencing must be approved by the authorized biologist and the USFWS/CDFG. (9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of California red-legged frogs may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly. (10) If California red-legged frogs are found within an area that has been fenced to exclude California red-legged frogs, activities will cease until the authorized biologist moves the California red-legged frog(s). (11) If California red-legged frogs are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the California red-legged frogs. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS. (12) Any California red-legged frogs found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, access to deep perennial pools, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area. (13) The authorized biologist will have the authority to stop all activities	CDFG	**Measure Implementation:** Conduct specified California red-legged frog surveys prior to construction of specified structures. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification**: Prior to construction survey (between May 1 and December 1) and during construction perform daily monitoring. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met. Submit survey report to CDFG prior to construction. Submit monitoring plan (if required) prior to construction. Submit monitoring reports monthly during construction.	

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until appropriate corrective measures have been completed. (14) Staging areas for all construction activities will be located on previously disturbed upland areas, if possible, designated for this purpose. All staging areas will be fenced. (15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times.	CDFG		
BIO-19. The 1,518-acre Salt Creek area sh all be offered for dedication to the public pursuant to Condition 42 of the approved Specific Plan using a "rough step" land dedication a pproach. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1). The Salt Creek area includes approximately 629 acres of coastal scrub communities within both Ventura and Los Angeles counties. This land dedication shall be managed in conjunction with the 4,205-acre High Country SMA (containing 1,314 acres of coastal scrub communities). a. To facilitate wildlife movement between the north side of SR-126 and the Salt Creek area, enhancements will be made to the existing agricultural undercrossing and to the agricultural land at the base of Salt Creek as discussed in BI O-59. A Wildlife Movement Enhancement Plan shall be submitted to the Corps and CDFG for approval prior to implementation. The plan shall include at the minimum the following: i. A portion of the agricultural field on the north side of SR-126 will be dedicated to wildlife movement. Trees and/or scrubs will be planted in the agricultural field to guide wildlife into the existing undercrossing. ii. On the south side of SR-126 two rows of trees/scrubs will be planted to guide wildlife to the Santa Clara River. iii. A wildlife corridor will be created through the agricultural fields at the base of Salt Creek Canyon.	CDFG	**Offers of Dedication:** The Salt Creek area shall be offered for dedication in three approximately equal phases of approximately 506 acres each proceeding from east to west, as follows: 1) The first offer of dedication will take place with the issuance of the 2,000 th residential building permit of Newhall Ranch; 2) The second offer of dedication will take place with the issuance of the 6,000 th residential building permit of Newhall Ranch; and 3) The remaining offer of dedication will be completed by the 11,000 th residential building permit of Newhall Ranch. **Note:** The dedication requirements provided above are adapted from Mitigation Measure SP 4.6-37 for the High County SMA. **Plans Prepared**: Wildlife Movement Enhancement Plan and implementation requirements to be submitted concurrently with applicab le sub-notification (CDFG) letters for individual projects. **Reporting**: Report annually (by April 1) to CDFG until success criteria are met. Pr ovide a quarterly report to CDFG indicating the number of residential building permits issued on the Specific Plan site by subdivision map number.	

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BIO-20. Approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1) using a "rough step" land dedication approach. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are commensurate with the quality of the impacted habitat being mitigated. In the event that the functional value of this burned habitat has not recovered within five years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events, then adaptive management pursuant to BIO-21 will be implemented for coastal scrub restoration.	CDFG	**Offers of Dedication:** The coastal scrub preservation area shall be offered for dedication in three approximately equal phases of approximately 633 acres each proceeding from north to south, as follows: (1) The first offer of dedication will take place with the issuance of the 2,000 th residential building permit of Newhall Ranch; (2) The second offer of dedication will take place with the issuance of the 6,000 th residential building permit of Newhall Ranch; and (3) The remaining offer of dedication will be completed by the 11,000 th residential building permit of Newhall Ranch. **Note:** The dedication requirements provided above are adapted from Mitigation Measure SP 4.6-37 for the High County SMA. **Reporting**: Provide a quarterly report to CDFG indicating the number of residential building permits issued on the Specific Plan site by subdivision map number. Evaluate and report annually for five years following dedication.	
BIO-21. Supplemental restoration of coastal scrub shall be conducted as an adaptive management measure pursuant to BIO-20. Eight areas were identified in the Draft Newhall Ranch Mitigation Feasibility Report in the High Country SMA, Salt Creek area, and River Corridor SMA (Dudek 2007A) for coastal scrub restoration. In the event that coastal scrub restoration is required pursuant to BIO-20, the applicant shall develop a Coastal Scrub Restoration Plan, subject to the approval of CDFG. The plan shall specify, at a minimum, the following: (1) the location of mitigation sites to be selected from suitable mitigation land in the High Country and Salt Creek areas identified in the Feasibility Study; (2) a description of "target" vegetation (native shrubland) to include estimated cover and abundance of native shrubs ; (3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as appropriate; (4) methods for the removal of non-native plants (*e.g.*, mowing, weeding, raking, herbicide application, or burning); (5) the source of all plant propagules (*e.g.*, seed, potted nursery stock, *etc*. collected from within five miles of the	CDFG	**Plan Requirements:** Coastal Scrub Restoration Plan(s) shall implement the specified requirements. **Plans Approved:** Plan(s) to be approved in conjunction with coastal scrub preservation area dedications required by Mitigation Measures BIO-20. **Field Verification:** Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Submit monitoring reports annually (by April 1) to CDFG until success criteria are met. Submit Coastal Scrub Restoration Plan to CDFG if coastal scrub restoration is required.	

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restoration site), the quantity and speci es of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; (6) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than two years; (7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/enhancement areas; and (8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful. Habitat restoration/ enhancement will be judged successful when: (1) percent cover and species richness of native species reach 50% of cover and species richness at reference sites; and (2) the replacement vegetation has persisted at least one summer without irrigation. Annual monitoring reports will be pr epared and submitted to CDFG and will be made available to the public to guide future mitigation planning. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; descri be success and completion of those efforts and other pertinent site c onditions (erosion, trespass, animal damage) in qualitative terms; and describe vegetation survival or establishment in quantitative terms.	CDFG	**Plan Requirements:** Coastal Scrub Restoration Plan(s) shall implement the specified requirements. **Plans Approved:** Plan(s) to be approved in conjunction with coastal scrub preservati on area dedications required by Mitigation Measures BIO-20. **Field Verification:** Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Submit monitoring reports annually (by April 1) to CDFG until success criteria are met. Submit Coastal Scrub Restoration Plan to CDFG if coastal scrub restoration is required.	
BIO-22. a. Newhall Land shall prepar e an Oak Resource Management Plan, to be submitted for approval to CDFG and County of Los Angeles, and implemented upon approval. The Pl an shall identify areas suitable for oak woodland enhancement and crea tion. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional meas ures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and BIO-22d for upland areas). The Oak Resource Management Plan shall include measures to create or enhance woodlands as follows: (1) lo cations and acreages of mitigation sites where woodland creation or enhancement will occur; (2) a description of proposed cover and number of native trees, shrubs, and grasses per acre to be established. This description shall be based on comparable intact woodlands in the ar ea 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	CDFG and LA County Dept. of Regional Planning	**Plan Requirements:** Oak Resource Management Plan shall include an implementation schedule and methods to achieve the specified oak woodland enhancement and creation requirements **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as ne cessary until restoration/ enhancement success criteria are achieved. **Reporting**: Post-development, s ubmit monitoring reports annually (by April 1) to CDFG until success criteria are met; Oak Resource Management Plan to CDFG and County for approval.	

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removal of non-native plants (e.g., mo wing, weeding, raking, herbicide application, or burning); (5) a plant palette listing all species, including sizes, planting densities, or seedi ng rates, to be based on target vegetation; (6) the source of all pl ant propagules (e.g., seed, potted nursery stock) and the quantity and species of seed or potted stock of all plants to be introduced or planted into the mitigation areas; (7) temporary irrigation, protection from herbivores , fertilizer, weeding, etc.; (8) a schedule and action plan to maintain and monitor the enhancement/restoration areas to include, at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a peri od no less than five years total and no less than two years after removal of irrigation (if any); (9) where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the mitigation areas shall be implemented as needed; (10) tree protection standards to be implemented for individual trees or woodlands adjacent to development activity; (11) success criteria as stated in BIO-22b and BIO-22d; and (12) contingency measures, such as repl anting, erosion control, irrigation system repair, or understory re-seedin g, to be implemented if habitat improvement/restoration efforts do not meet the success criteria stated in the plan. b. To meet the minimum mitigation criteria set forth in CLAOTO, Newhall Land will replace impacted oaks (measuring 8 inches in diameter, or greater, or with a combined diameter of 12 inches for multi-stem oaks) at a ratio of 2:1. Additi onally, oaks meeting the criteria for classification as a Heritage Tree (defined by CLAOTO as "any oak tree measuring 36 inches or more in diamet er") will be replaced at a ratio of 10:1. Whether they are planted in dedicated open space areas or developed areas, replacement oak trees planted in conformance with CLAOTO shall adhere to the following standards: 1. Replacement oak trees shall be exclusively indigenous species, shall be at least a 15-gallon size specimen, and measure at least one inch in diameter one foot above the base, unless otherwise approved by the County Forester. 2. Replacement trees shall be properly cared for and maintained for a period of two years and replaced by Newhall Land if mortality occurs within that period.	CDFG and LA County Dept. of Regional Planning	**Plan Requirements:** Oak Resource Management Plan shall include an implementation schedule and methods to achieve the specified oak woodland enhancement and creation requirements **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as ne cessary until restoration/ enhancement success criteria are achieved. **Reporting**: Post-development, s ubmit monitoring reports annually (by April 1) to CDFG until success criteria are met; Oak Resource Management Plan to CDFG and County for approval.	

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3. Replacement planting shall be conducted in phases as impacts occur. Alternatively, Newhall Land may choose to plant replacement trees in open space areas prior to realization of Project-related impacts (pre-mitigation). Any pre-mitigation shall adhere to the standards outlined herein. 4. Following completion of the two-year maintenance period, the County Forester shall provide final authorization that CLAOTO standards have been met. c. In addition to the CLAOTO requirements (BIO-22b, above), this EIS/EIR requires replacement of oak trees at the ratios in the table below for trees lost or impacted in uplands. These trees are in addition to the CLAOTO requirement described above. These additional trees may also be incorporated into woodland habitat enhancement or creation, as described above. Additional replacement ratios are provided in **Table 4.5-70**. d. Newhall will mitigate lost oak woodlands occurring on upland sites (*i.e.*, outside CDFG/Corps jurisdictional stream channels) by creating or enhancing oak woodlands in the Salt Creek area and High Country SMA. At minimum, Newhall Land will mitigate woodland habitat at a 1:1 ratio through creation of new oak woodlands. As an alternative, Newhall Land may choose to enhance, improve, and manage existing degraded woodland areas at a minimum 2:1 ratio for lost woodland acreage. For woodland enhancement or replacement, dominant species (coast live oak or valley oak) and planting densities will be based on mitigation site suitability. All plant propagules, including acorns or tree cuttings and all seed or potted nursery stock of oaks or other species, shall be collected within a five-mile radius and within 1,000 feet elevation of the restoration site. The woodland creation or enhancement sites shall be monitored for oak tree survival and vigor and other habitat values, including species diversity and wildlife use. The replacement or enhancement sites will be considered "complete" upon meeting all of the following success criteria, or as otherwise approved by CDFG. Any replacement oak trees planted in woodlands for conformance with CLAOTO will also be subject to CLAOTO performance criteria (BIO-22b). 1. Regardless of the date of initial woodland creation or enhancement, each site must have been without active manipulation by irrigation,	CDFG and LA County Dept. of Regional Planning	**Plan Requirements:** Oak Resource Management Plan shall include an implementation schedule and methods to achieve the specified oak woodland enhancement and creation requirements **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/ enhancement success criteria are achieved. **Reporting**: Post-development, submit monitoring reports annually (by April 1) to CDFG until success criteria are met; Oak Resource Management Plan to CDFG and County for approval.	

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planting, or re-seeding for a minimum of three years prior to evaluation for successful completion. 2. The percent cover and species richness of restored or enhanced native vegetation shall be evaluated based on target vegetation described in the woodland creation or enhancement plan. 3. Densities (numbers/acre) of surviving, healthy oak shall be within 5% of the plan target density. Cover and species richness of other native shrubs shall reach 50% of the cover and species richness described for the "target" woodland. Optimal woodland densities and acorn planting quantities, by oak woodland type, are presented in **Table 4.5-71**. 4. Non-native grass cover shall not exceed the "target" woodland non-native grass cover, and other non-native species shall not exceed 10% cover at any time. Any species listed on the California State Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site at the time that project success is determined. ***Tables 4.5-70 and 71 are provided as MMRP Appendix E.***	CDFG and LA County Dept. of Regional Planning	**Plan Requirements:** Oak Resource Management Plan shall include an implementation schedule and methods to achieve the specified oak woodland enhancement and creation requirements **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/ enhancement success criteria are achieved. **Reporting**: Post-development, submit monitoring reports annually (by April 1) to CDFG until success criteria are met; Oak Resource Management Plan to CDFG and County for approval.	
BIO-23. A final Spineflower Conservation Plan (SCP) shall be adopted and implemented after approval by CDFG, including the permanent dedication of preserves (see draft in Appendix 1.0). The proposed spineflower preserve areas shall be offered to CDFG as a permanent conservation easement within one year after issuance of the requested 2081 Permit to ensure long-term protection. The conservation easement shall be to CDFG and contain appropriate funding and restrictions to help ensure that the spineflower preserve lands are protected in perpetuity.	CDFG	**Plan Approved:** SCP and conservation easement to be approved prior recordation of tract maps that have preserve areas. **Reporting**: Submit reports annually to CDFG in perpetuity.	
BIO-24. The spineflower preserves shall be managed by Newhall Land and their preserve manager(s) and/or natural lands management organization(s) (NLMO). Newhall Land shall submit a statement of qualifications for their proposed preserve manager(s)/NLMO(s) for approval by CDFG. Newhall Land will fund in full all implementation of spineflower preserve management as described in the SCP and all mitigation measures listed in this document.	CDFG	**Measure Implementation**: Preserve manager SOQ and funding mechanism(s) to be submitted and approved by CDFG prior to the start of construction activities. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-25. Disturbed portions (*i.e.*, agricultural lands, disturbed lands, and developed lands) of the spineflower preserves, ~~or~~ including buffers, will be restored through revegetation with native plant communities. In summary, areas that have greater than 30% relative cover by weeds will	CDFG and LA County Dept. of Regional Planning	**Plan Approved:** Habitat restoration and enhancement plans submitted to County and CDFG for approval prior to the start of grading activities in the vicinity of preserve	

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be restored to have relative cover comparable to that of existing occupied spineflower habitat. Habitat restoration and enhancement plans (including restoration plans) for areas within the preserves shall be prepared at the direction of the preserve manager by a qualified biologist and submitted to the County and CDFG for approval prior to implementation. In addition, Cal-IPC List A and B plants that are present within the spineflower preserve will be controlled. Restoration and enhancement efforts within the spineflower preserve areas shall be in conformance with the Spineflower Conservation Plan.	CDFG and LA County Dept. of Regional Planning	areas. **Field Verification** : Perform quarterly monitoring until success criteria are met. Reporting: Submit reports annually (by April 1) to County and CDFG until success criteria are met.	
BIO-26. In the event that a spineflower preserve, or buffer, or a portion of a spineflower preserve, or buffer burns in a wildfire or suffers from mass movements (*e.g.*, landslides, slope sloughing, or other geologic events), the spineflower preserve manager and Newhall Land shall promptly review the site and determine what action, if any, should be taken. The primary anticipated post-fire spineflower preserve management activity involves monitoring the site and controlling annual weeds that may invade burned areas following a fire event, especially when such weeds (that were not previously present or not present in similar densities) exceed the 30% maximum threshold (see BIO-25). If fire-control lines or other forms of bulldozer damage occur in the spineflower preserves, these areas will be repaired and revegetated to pre-burn conditions or better. An emergency fire response plan will be prepared (in accordance with Mitigation Measure SP-4.6-72) prior to the establishment of the spineflower preserves and approved by CDFG and Los Angeles County Fire Department. The 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. The same methods will be applied to mass-movement, landslide, or slope-sloughing types of events. This measure shall be implemented in conformance with the Spineflower Conservation Plan.	CDFG and Los Angeles County Fire Department	**Measure Implementation** : The requirements of this mitigation measure are to be implemented after a fire or slope movement in the vicinity of a spineflower preserve. **Plans Prepared**: An emergency fire response plan shall be developed prior to the establishment of spineflower preserves. **Plans Approved** : Emergency fire response plan to be approved by CDFG and Los Angeles County Fire Department. Plan to be reviewed by LACFD every five years. **Reporting**: Submit reports annually (by April 1) to County and CDFG until success criteria are met.	
BIO-27. Spineflower preserve temporary fencing shall be shown on construction plans and installed prior to initiating construction clearing and grubbing activities within 500 feet of spineflower preserves, including the buffers. The spineflower preserve manager or a qualified biologist shall monitor fence installation. Clearing for fence installation shall be minimized to what is necessary to install the fence and, where possible, shall leave the roots of native plants in place to allow regrowth. As necessary, native vegetation will be restored and weed management will be performed following fence installation to ensure temporarily	CDFG	**Measure Implementation** : Required fencing to be depicted on applicable grading plans. Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Preserve manager to field inspect as necessary when grading occurs in the vicinity of spineflower preserves.	

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cleared native plant areas do not become weed dominated after installation. General Project clearing and grubbing within 2-500 feet of the fence may commence upon verification by the spineflower preserve manager or the qualified biologist that protective fencing is in place and is adequate. Appropriate BMPs shall be installed at the edge of development manufactured slopes when the spineflower preserve is within 5200 feet and down-slope of proposed development.	CDFG	**Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-28. Construction documents shall indicate that the grading contractor is responsible for protecting spineflower preserves during construction work. The construction documents shall indicate that the contractor is responsible for informing all employees and subcontractors of the environmentally sensitive areas and the proper conduct of work when working near (*e.g.*, within 1-500 feet) of these areas. The construction documents shall require a pre-construction meeting to perform an "environmental education session" with the grading contractor/contractor's employees, subcontractors, and equipment operators prior to commencing construction work within 1500 feet of the spineflower preserves. The environmental education session shall be conducted by the spineflower preserve manager or a qualified biologist and focus on informing workers of the location and sensitivity of the spineflower and the requirements for protecting it. The construction documents shall indicate that the grading contractor shall be responsible for mitigating any impacts to spineflower preserves due to the negligence of the grading contractor/contractor's employees, subcontractors, or equipment operators. If accidental trespass into a spineflower preserve ~~take~~ occurs during construction, the violation shall be documented by the preserve manager and immediately reported to CDFG. Follow-up action will be taken in accordance with the Section 2081 of the Fish and Game Code, Incidental Take ~~loss shall be addressed in accordance with the section 2081~~ Permit issued by CDFG.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification** : The biologist shall provide CDFG evidence that the required "environmental education session" was conducted. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-29. Construction plans shall include necessary design features and construction notes to demonstrate consistency of development in the vicinity of spineflower preserves with the Spineflower Conservation Plan (SCP). In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP) shall include minimum BMPs. Together, the implementation of these requirements shall ensure that spineflower preserve populations are protected during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP and noted on construction plans, where appropriate, to	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Preserve manager to field inspect as necessary when grading occurs in the vicinity of spineflower preserves. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

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avoid impacting spineflower preserves during construction: • Avoid planting or seeding invasive species in development areas during construction phases ~~within 200 feet of spineflower preserve areas~~; • Do not use erosion control devices that may contain weeds, such as hay bales, *etc.*, within 2 ~~1~~00 feet of spineflower preserves or anywhere upstream of spineflower preserves; • Do not windrow or stockpile soil ~~along spineflower~~ within 200 feet of spineflower preserve boundaries or anywhere upstream of spineflower preserves; • Do not locate staging areas, maintenance, or concrete washout areas within 500 feet (unless otherwise authorized by CDFG, and no closer than 200 feet in any instance), where adjacent to or anywhere upstream of spineflower preserves; • Do not store toxic compounds, including fuel, oil, lubricants, paints, release agents, or any other construction materials that could damage spineflower habitat if spilled near spineflower preserve areas, or anywhere upstream of spineflower preserves, or along spineflower preserve boundaries; • Provide location and details for any fencing for temporary and permanent access control along preserve boundaries (per BIO-31 for temporary fencing and BIO-36 for permanent fencing); • Provide location and details for any dust control fencing along preserve boundaries (per BIO-32); and • Provide location and details for any stormwater run-on controls/BMPs coming from development area to spineflower preserve (per BIO-38 and BIO-39).	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Preserve manager to field inspect as necessary when grading occurs in the vicinity of spineflower preserves. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-30. The spineflower preserve manager or qualified biologist shall review construction plans and specifications, SWPPP, and, where appropriate, erosion control plans and implementation of SCAQMD Rule 403d dust control measures (SCAQMD 2005) prior to construction within 5 ~~2~~00 feet of spineflower preserves for compliance with the Spineflower Conservation Plan and associated permits and Project-related environmental documents. A copy of the SWPPP and associated monitoring reports will be provided to CDFG.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification** : The preserve manager or qualified biologist shall provide CDFG evidence of required plan review prior to the start of grading activities. **Reporting**: Provide SWPPP prior to construction, and submit monitoring reports monthly to CDFG during construction.	

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BIO-31. Spineflower preserves shall be protected prior to clearing and during construction with temporary construction fencing as described in BIO-27. Openings shall be included in the fence when located within wildlife corridors and vegetation community connectivity areas to allow for the safe passage of wildlife. The spineflower preserve manager or a qualified biologist shall indicate the location and width of each of these openings. The fencing shall be three-strand non-barbed wire fence or bright orange U.V. stabilized polyethylene construction "snow" fencing, attached to metal t-posts that extend at least four feet above grade or equivalent. Protective fencing shall be maintained in good condition until completion of Project construction. Where construction activities occur within 2~~-~~500 feet of a spineflower preserve, the spineflower preserve manager or qualified biologist shall review fencing weekly during construction monitoring visits and note any fencing that is in need of repair. Repairs shall be completed within three working days of notification by the spineflower preserve manager or qualified biologist.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification.** Preserve manager to field inspect weekly and as necessary throughout construction period. **Reporting**: Submit monitoring reports to CDFG monthly during construction.	
BIO-32. Development areas shall have dust control measures implemented and maintained to prevent dust from impacting vegetation within the spineflower preserve areas. Dust control shall be implemented during construction in compliance with SCAQMD Rule 403d (SCAQMD 2005). Where construction activities occur within 100 feet of a spineflower location, chemical dust suppression shall not be utilized. Where determined necessary by the spineflower preserve manager or qualified biologist, a screening fence (*i.e.*, a six-foot high chain link fence with green fabric up to a height of five feet) shall be installed to protect spineflower locations.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Preserve manager to field inspect as necessary when grading occurs in the vicinity of spineflower preserves. **Reporting**: Submit monitoring reports monthly to CDFG during construction.	
BIO-33 The spineflower preserve manager or qualified biologist shall perform weekly construction monitoring for all construction activities within ~~2~~500 feet of spineflower preserve areas. The spineflower preserve manager's or qualified biologist's construction monitoring tasks shall include reviewing and approving protective fencing, dust control measures, and erosion control devices before construction work begins; conducting a contractor education session at the preconstruction meeting; ~~and~~ reviewing the site weekly (minimum) during construction to ensure the fencing, dust control, and BMP measures are in place and functioning correctly and that work is not directly or indirectly impacting spineflower plants; and ~~.~~ quarterly monitoring shall be initiated for Argentine ants along the construction/open space interface at sentinel locations where invasions could occur (*e.g.*, where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification.** Preserve manager to field inspect weekly and as necessary throughout construction period. **Reporting**: Submit monitoring reports to CDFG monthly during construction.	

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monitoring locations. Ant pitfall traps will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures will be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to nest/mound insecticide treatment, or available natural control methods being developed. A general reconnaissance of the infested area would also be conducted to identify and correct the possible source of the invasion, such as uncontrolled urban runoff, leaking pipes, or collected water. Each site visit shall be followed up with a summary monitoring report sent electronically to Newhall Land indicating the status of the site. Monthly monitoring reports, as needed, shall be submitted to CDFG and the County of Los Angeles). Monitoring reports shall include remedial recommendations and issue resolution discussions when necessary.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification.** Preserve manager to field inspect weekly and as necessary throughout construction period. **Reporting**: Submit monitoring reports to CDFG monthly during construction.	
BIO-34. Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within ~~1~~200 feet of a spineflower preserve shall be reviewed and approved within 30 days by the spineflower preserve manager or qualified biologist and CDFG to ensure that the proposed landscape plants will not naturalize and require maintenance or cause vegetation community degradation in the spineflower preserve and buffer areas. Container plants to be installed within public areas within 200 feet of the spineflower preserves shall be inspected by the spineflower preserve manager or qualified biologist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, for public areas within 200 feet of spineflower preserves, landscape plants shall not be on the Cal-IPC California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants listed in Appendix B of the SCP. The current Cal-IPC list can be obtained from the Cal-IPC web site (http://www.cal-ipc.org/ip/inventory/index.php).	CDFG	**Measure Implementation** : Landscape plan notes shall include the requirements of this mitigation measure. **Field Verification** : Spineflower preserve manager or qualified biologist shall inspect container plants prior to installation. **Reporting**: Prior to and during landscape construction, submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-35. All portions of the spineflower preserves shall be closed, with the exception of pre-identified existing dirt roads and utility easements. The pre-identified existing dirt roads and utility easement access roads shall function as access routes for the spineflower preserve manager, spineflower preserve maintenance personnel, utility personnel, and emergency services vehicles only (*e.g.*, police, fire, and medical) No other vehicle or foot traffic, including nature or recreational trails, will be permitted in the preserve, including the buffer. The dirt roads shall be	CDFG	**Measure Implementation**: Access road gates, locks and signage to be installed prior to occupancy of adjoining land uses. **Field Verification:** Preserve manager to field inspect as necessary prior to occupancy of adjoining land uses. Conduct ongoing maintenance of signs. **Reporting**: During and post-development, submit reports	

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gated and locked at the outside edges of the buffer zone. Signs discouraging unauthorized access shall be posted. The only persons or entities issued gate keys shall be the spineflower preserve managers and their employees, easement holding utility companies, emergency services, Newhall Land, and CDFG.	CDFG	annually (by April 1) to CDFG until success criteria are met.	
BIO-36. Fencing shall be installed al ong the outside edge of the spineflower preserve and buffer areas adjacent to proposed developments, parks, golf courses, or other "active land uses" to prevent unauthorized access. Specific areas that are adequately protected by steep terrain (1.5:1 or steeper) and/ or dense vegetation may not require fencing but would require signage. The determination of the need for fencing in these areas shall be subjec t to the approval of the spineflower preserve manager or qualified biologi st. If monitoring determines that slope and/or vegetation is not effect ive at deterring unauthorized access, additional fencing may be required by the spineflower preserve manager or qualified biologist. Fencing is not required in areas bordered by large parcels of conserved natural open space areas or the Santa Clara River riparian corridor, as installing fencing in these areas would be unnecessary and damaging to existing vegetation and wildlife corridors. Fencing must extend a minimum of f our feet above grade and include wood-doweled split rail fencing, exte rior grade heavy-duty vinyl three-railed fencing, three-strand non-ba rbed wire, or similar. Fencing installed adjacent to native vegetation communities and natural open space areas will allow for the passage of animals.	CDFG	**Measure Implementation**: Access road gates, locks and signage to be installed prior to occupancy of adjoining land uses. **Field Verification:** Preserve manager to field inspect as necessary prior to occupancy of adjoining land uses. Conduct on-going monitoring to assess effectiveness of fencing. **Reporting**: During and post-development, submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-37. Outdoor all-weather signs meas uring 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 si gns will be posted. The placement will take topography into account, emphasizing placement on ridgelines where signs will be visible to emergency fire personnel and others. Signs shall state in English and Spanish that the area is a biological preserve that hosts a state-listed endangered and federal candidate plant species and that trespassing is prohibited (in accordance Mitigation Measure SP-4.6-68). Signs shall indicate that fuel modificati on and management work is not allowed within the spineflower preserve ~~or~~ (including buffer areas). S~~ignage at any trailheads near spineflower preserves shall describe the spineflower preserve , its purpose, and the applicable restrictions regarding spineflower conservation.~~ The signage shall state that people who do not abide by these rules or who damage the protected	CDFG	**Measure Implementation**: CDFG to approve sign design prior to installation. **Field Verification:** Preserve manager to field inspect as necessary prior to occupancy of adjoining land uses. Conduct ongoing maintenance of signs. **Reporting**: During and post-development, submit reports annually (by April 1) to CDFG until success criteria are met.	

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species will be subject to prosecution, including fines and/or imprisonment. All signage shall in clude emergency contact information and shall be reviewed and approved by the spineflower preserve manager or qualified biologist.			
BIO-38. Storm drain outfalls from prop osed development areas shall only be installed uphill from spineflower preserve areas where necessary to retain pre-construction hydrological conditions within the spineflower preserves, sustain existing riparian and wetland vegetation communities, and/or allow for the restoration of currently disturbed areas to native riparian/alluvial vegetation communities. When located in a spineflower preserve area, storm drains must meet the following criteria: • Storm drains must not impact spineflower either directly or indirectly; and • Under no circumstances shall stor m drains daylight onto steeply sloped areas or other areas that would cause erosion.	CDFG	**Plan Requirements:** Drainage plans are to implement the specified drainage design measures. Preserve manager to review drainage plans prior to the start of construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-39. 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 mu st be designed based on pre- and post-construction hydrological studies (in accordance with Mitigation Measure SP-4.6-69). Storm drains and permanent structural BMPs shall be designed by a licensed civil engi neer. Requirements of BIO-29 and BIO-38, where applicable, shall be incorporated into the facility design and shall be subject to approval by the spineflower manager or qualified biologist. Long-term maintenance of storm drain BMPs will be the responsibility of the designated maintenance entity.	CDFG	**Plan Requirements:** Drainage plans are to implement the specified drainage design measures. Preserve manager to review drainage plans prior to the start of construction. **Reporting**: Prior to construction (design phase) and post-construction (maintenance phase), submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-40. The Draft RMDP Slender Mariposa Lily Mitigation and Monitoring Plan (Dudek 2007I) shall be revised and submitted to CDFG for review and approval prior to ground disturbance to occupied habitat. Upon approval, the plan will be im plemented by the applicant or its designee. The revised pl an will demonstrate the feasibility of enhancing or restoring slender mariposa lily habitat in selected areas to be managed as natural open space (*i.e.*, the Salt Creek area or High Country SMA, spineflower preserves, or River Co rridor SMA) without conflicting with other resource management objectives. Habitat replacement/enhancement	CDFG	**Plan Requirements:** A revised Slender Mariposa Lily Mitigation Monitoring Plan and implementation schedule that complies with requirements specified by this measure shall be prepared and submitted to CDFG prior to ground disturbance of occupied habitat. **Field Verification:** Perform monitoring quarterly. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Revised RMDP Sle nder Mariposa Lily	

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will be at a 1:1 ratio (acres restored/enhanced to acres impacted). The revised plan will describe habitat improvement/restoration measures to be completed prior to introducing slender mariposa lily. Habitat improvement/restoration will be based on native occupied slender mariposa lily habitat. The revised plan will specify: (1) the location of mitigation sites (may be selected from among 559 acres of suitable mitigation land in the High Country SMA and Salt Creek area identified in the Draft Newhall Ranch Mitigation Feasibility Study (Dudek 2007A); (2) a description of "target" vegetation (native shrubland or grassland) to include estimated cover and abundance of native shrubs and grasses in occupied slender mariposa lily habitat on Newhall Ranch land (either at sites to be destroyed by construction or at sites to be preserved); (3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as appropriate; (4) methods for the removal of non-native plants (*e.g.*, mowing, weeding, raking, herbicide application, or burning); (5) the source of all plant propagules (seed, potted nursery stock, *etc.*), the quantity and species of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; (6) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than two years; (7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/enhancement areas; and (8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful. Habitat restoration/enhancement will be judged successful when (1) percent cover and species richness of native species reach 50% of their cover and species richness at undisturbed occupied slender mariposa lily habitat at reference sites; and (2) the replacement vegetation has persisted at least one summer without irrigation. At that point slender mariposa lily propagules (seed or bulbs) will be introduced onto the site. The revised plan will specify methods to collect propagules and introduce slender mariposa lily into these mitigation sites. Introductions will use source material (seeds or bulbs) from no more than 1.0 mile distant, similar slope exposures, and no more than 500 ft. elevational difference from the mitigation site, unless otherwise approved by CDFG. Bulbs may be salvaged and transplanted from slender mariposa lily occurrences	CDFG	Mitigation and Monitoring Plan submitted to CDFG prior to ground disturbance; monitoring reports submitted annually (by April 1) to CDFG.	

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to be lost; alternately, seed may be collected from protected occurrences, following CDFG-approved seed collection guidelines (*i.e.*, MOU for rare plant seed collection). No bulbs will be translocated into areas within 300 feet of proposed or existing development. Newhall Land or its designee will monitor the reintroduction sites for no fewer than five additional years to estimate slender mariposa lily survivorship (for bulbs) or seedling establishment (for seeded sites). Annual monitoring reports will be prepared and submitted to CDFG and will be made available to the public to guide future mitigation planning for slender mariposa lily. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; describe success and completion of those efforts and other pertinent site conditions (erosion, trespass, animal damage) in qualitative terms; and describe mariposa lily survival or establishment in quantitative terms. A minimum of 133 acres of slender mariposa lily cumulative occupied area will be conserved and managed in the RMDP and SCP Project boundaries. Of these 133 acres, approximately 103 acres of slender mariposa lily cumulative occupied area will be conserved and managed in the RMDP and SCP Project boundary in the High Country SMA and Salt Creek area, and two acres occur within the River Corridor SMA and/or proposed spineflower preserves. Additional cumulative occupied area will be conserved and managed in the San Martinez Grande Canyon area at a 1:1 ratio (acres conserved and managed to acres impacted) based on impacts to cumulative occupied area within the Entrada planning area, as a means to ensure regional biodiversity of the species. Up to an additional 28 acres of slender mariposa lily cumulative occupied area can be conserved and managed in the San Martinez Grande Canyon area for this purpose.	CDFG	**Plan Requirements:** A revised Slender Mariposa Lily Mitigation Monitoring Plan and implementation schedule that complies with requirements specified by this measure shall be prepared and submitted to CDFG prior to ground disturbance of occupied habitat. **Field Verification:** Perform monitoring quarterly. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Revised RMDP Slender Mariposa Lily Mitigation and Monitoring Plan submitted to CDFG prior to ground disturbance; monitoring reports submitted annually (by April 1) to CDFG.	
BIO-41. Thirty days prior to construction activities in grassland, scrub, chaparral, oak woodland, riverbank, and agriculture habitats, or other suitable habitat a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for American badger. If American badgers are present, occupied habitat shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den. Maternity dens shall be avoided during the pup-rearing season (February 15 through July 1) and a minimum 200 foot buffer established. This buffer may be reduced based on the location of the den upon consultation with CDFG. Maternity dens shall be flagged for avoidance, identified on	CDFG	**Measure Implementation:** Conduct specified American badger surveys prior to construction in specified areas. Required follow-up procedures to be conducted prior to construction period. **Reporting:** 30 days prior to construction/American badger relocation, submit written report to CDFG. Prepare and submit annual monitoring reports.	

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construction maps, and a qualified biologist shall be present during construction. If avoidance of a non-maternity den is not feasible, badgers shall be relocated either by trapping or by slowly excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more that four inches at a time) before or after the rearing season (February 15 through July 1). Any relocation of badgers shall occur only after consultation with CDFG. A written report documenting the badger removal shall be provided to CDFG within 30 days of relocation. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.	CDFG	**Measure Implementation:** Conduct specified American badger surveys prior to construction in specified areas. Required follow-up procedures to be conducted prior to construction period. **Reporting:** 30 days prior to construction/American badger relocation, submit written report to CDFG. Prepare and submit annual monitoring reports.	
BIO-42. All oaks that will not be removed that are regulated under CLAOTO with driplines within 50 feet of land clearing (including brush clearing) or areas to be graded shall be enclosed in a temporary fenced zone for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone (*i.e.*, the area at least 15 feet from the trunk or five feet beyond the drip line, whichever distance is greater). No parking or storage of equipment, solvents, or chemicals that could adversely affect the trees shall be allowed within 25 feet of the trunk at any time. Removal of the fence shall occur only after the Project arborist or qualified biologist confirms the health of preserved trees.	CDFG	**Measure Implementation** : Required fencing to be depicted on applicable grading plans. Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Field inspect as necessary when grading occurs in the vicinity of oak trees and prior to fence removal. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-43. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, ba nk protection, trails, and/or other construction activities that result in any disturbance to the banks or wetted channel, aquatic habitats within construction sites and access roads, as well as all aquatic habitats within 300 feet of construction sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps and CDFG shall be notified at least 14 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any construction work in the riverbed. If there is evidence that fish spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by USFWS. If surveys determine that gravid fish are present, that spawning has recently occurred, or that juvenile fish ar e present in the proposed construction areas, all activities within aquatic habitat will be suspended. Construction within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area.	CDFG	**Measure Implementation:** Conduct specified fish surveys prior to construction of specified structures and submit required written report. Required follow-up procedures to be conducted prior to construction period. **Reporting**: Notify CDFG at least 14 days prior to survey. File survey report to CDFG within 14 days of survey and no sooner than 10 days prior to construction.	

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BIO-44. Temporary bridges, culvert crossings, or other feasible methods of providing access across the river shall be constructed outside of the winter season and not during periods when spawning is occurring. Prior to the construction of any temporary or permanent crossing of the Santa Clara River, the applicant shall develop a Stream Crossing and Diversion Plan. The plan shall include the following elements: the timing and methods for pre-construction aquatic species surveys; a detailed description of the diversion methods (*e.g.*, berms shall be constructed of on-site alluvium materials of low silt content, inflatable dams, sand bags, or other approved materials); special-status species relocation; fish exclusion techniques, including the use of block netting and fish relocation; methods to maintain fish passage during construction; channel habitat enhancement, including the placement of vegetation, rocks, and boulders to produce riffle habitat; fish stranding surveys; and the techniques for the removal of crossings prior to winter storm flows. The Plan shall be submitted to the USFWS and CDFG for approval at least 30 days prior to implementation. If adult special-status fishes are present and spawning has not occurred, they shall be relocated prior to the diversion or crossing. Block nets of 1/8-inch woven mesh will be set upstream and downstream. On days with possible high temperature or low humidity (temperatures in excess of 80° F), work will be done in the early morning hours, as soon as sufficient light is available, to avoid exposing fishes to high temperatures and/or low humidity. If high temperatures are present, the fishes will be herded to downstream areas past the block net. Once the fishes have been excluded by herding, a USFWS staff member or his or her agents shall inspect the site for remaining or stranded fish. A USFWS staff member or his or her agents shall relocate the fish to suitable habitat outside the Project area (including those areas potentially subject to high turbidity). During the diversion/relocation of fishes, the USFWS or his or her agents shall be present at all times.	CDFG	**Plan Requirements:** A Stream Crossing and Diversion Plan that complies with requirements specified by this measure shall be prepared and submitted to USFWS and CDFG. Required follow-up procedures to be conducted prior to construction period. **Reporting**: Submit Stream Crossing and Diversion Plan to CDFG at least 30 days prior to implementation.	
BIO-45. a. **<u>Stream diversion bypass channels</u>** Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/USFWS. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS. The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a	CDFG	**Measure Implementation.** All proposed stream diversion bypass channels and dewatering activities to comply with specified requirements, including requirements of BIO-44, throughout the construction period. CDFG and USFWS to approve proposed channels prior to construction and channels to be provided at the end of construction operations. **Field Verification:** Field monitoring during the	

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segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/USFWS, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (i.e., boulders, large logs, or other CDFG/USFWS-approved materials) placed in the channel at the point of each curve (i.e., on alternating sides of the channel). If emergent aquatic vegetation is present in the original channel, the applicant will transplant suitable vegetation into the diversion channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed construction areas. At the conclusion of the diversion, either at the commencement of the winter season, or the completion of construction, the applicant will coordinate with CDFG/USFWS to determine if the diversion should be left in place or the stream returned to the original channel. If CDFG/USFWS determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (*i.e.*, while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (*i.e.*, boulders, large logs, or other CDFG/USFWS-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place. b. **<u>Dewatering:</u>** Construction dewatering in close proximity to stream flow shall implement the following: – Assess local stream and groundwater conditions, including flow depths, groundwater elevations, and anticipated dewatering cone of influence (radius of draw down). – Assess surface water elevations upstream, adjacent to, and downstream of the extraction points, to assess any critical flow	CDFG	construction period to be conducted daily by qualified restoration ecologist. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

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regimes susceptible to excessive draw down and therefore fish stranding issues. – Assess surface water elevations downstream of the discharge locations (if discharge is proposed to the flowing stream) to assess any flow regimes and overbank areas that may be susceptible to flooding and therefore fish stranding at the cessation of discharge. Discharge locations shall also be assessed for potential channel bed erosion from dewatering discharge, and appropriate BMPs must be implemented to prevent excessive erosion or turbidity in the discharge. – The information above shall be summarized and provided in a plan approved by CDFG and Corps. – Fish shall be excluded from any artificial flowing channels from dewatering discharge. Methods to ensure separation may include, but are not limited to: block netting at the confluence; creation of a physical drop greater than four inches at the confluence; or maintaining a velocity range unsuitable for fish passage, such as a berm at the confluence with small diameter pipes for discharge.	CDFG	**Measure Implementation.** All proposed stream diversion bypass channels and dewatering activities to comply with specified requirements, including requirements of BIO-44, throughout the construction period. CDFG and USFWS to approve proposed channels prior to construction and channels to be provided at the end of construction operations. **Field Verification:** Field monitoring during the construction period to be conducted daily by qualified restoration ecologist. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-46. During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless USFWS personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and USFWS within 24 hours.	CDFG	**Measure Implementation:** Specified monitoring activities to be conducted during stream diversion and culvert installation. Required follow-up procedures to be conducted throughout construction period. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Report to CDFG within 24 hours of finding stranded fish.	
BIO-47. Slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area to provide refuge for special-status fishes during construction. Where feasible and in consultation with CDFG and USFWS, the applicant shall enhance slow-moving water habitats for each linear foot disturbed by hand-excavating shallow side channels and placing multiple sets of obstructions (*e.g.*, boulders, large logs, or other CDFG- and USFWS-approved materials) in the channel.	CDFG	**Measure Implementation**: Required habitat areas to be provided prior to the start of river crossing or bridge construction **Field Verification:** Field inspect as necessary prior to start of construction operations. CDFG to approve preconstruction materials. Consult with CDFG and USFWS when enhancing slow-moving water habitats. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

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BIO-48. Installation of bridges, culverts , or other structures shall not impair the movement of fish and a quatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert crossings shall include provisions for a low flow channel where velocities are less than two feet per second to allow fish passage.	CDFG	**Plan Requirements:** Grading/construction plans are to implement the specified dr ainage design measures. Review drainage plans prior to the start of construction. Proposed drainage plans to be provided in conjunction with the required Construction Notification (Corps) and Sub-Notification (CDFG). Reporting: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-49. Water containing mud, silt, or other pollutants from construction activities shall not be allowed to enter a flowing stream or be placed in locations that may be subject to normal storm flows during periods when storm flows can reasonably be expected to occur.	CDFG	**Plan Requirements** . These requirements shall be included as notes on all grading plans. **Reporting**: During construction, submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-50. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, ba nk protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 500 feet of construction sites and access roads shall be surveyed at the appropriate season for southwestern pond turtle. Focused surveys shall consist of a minimum of four daytime surveys, to be comple ted between April 1 and June 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream cond itions. The applicant shall develop a Plan to address the relocation of southwestern pond turtle. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for this species; identify the locations where more intensive efforts should be conducted; identify the habitat and conditions in the proposed relocation site(s); the methods that would be utilized for trapping and relocating indivi duals; and provide for the documentation/recordation of the numbers of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities within potentially occupied habitat. If southwestern pond turtles are detect ed in or adjacent to the Project, nesting surveys shall be conducted. Focused surveys for evidence of southwestern pond turtle nesting shall be conducted in, or adjacent to, the Project when suitable nesting habitat exists within 1,300 feet of occupied habitat in an area where Project-rela ted ground disturbance will occur (*e.g.*, development, ground disturbance). If both of those conditions are met, a qualified biologist shall conduct focused, systematic surveys for southwestern pond turtle nesting sites. The survey area shall include all	CDFG	**Measure Implementation:** Conduct specified southwestern pond turtle surveys and prepare relocation plan prior to construction of specified structures. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Plan Approval** : Submit plan for relocation of southwestern pond turtle 60 days prior to construction and submit resume of biologist prior to implementation. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

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suitable nesting habitat within 1,300 f eet of occupied habitat in which Project-related ground disturbance will occur. This area may be adjusted based on the existing topographical features on a case-by-case basis with the approval of CDFG. Surveys will entail searching for evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest depredation. If a southwestern pond turtle nesting area would be adversely impacted by construction activities, the applicant shall avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist shall coordinate with CDFG to identify if it is possible to relocate the pond turtles. Eggs or hatchlings shall not be moved without written authorization from CDFG. The qualified biologist shall be pres ent during all activities immediately adjacent to or within habitat that supports populations of southwestern pond turtle. Clearance surveys for pond turtles shall be conducted within 500 feet of potential habitat by the authorized biologist prior to the initiation of construction each day. The resume of the proposed biologist will be provided to CDFG for approval prior to conducting the surveys.	CDFG	**Measure Implementation:** Conduct specified southwestern pond turtle surveys and prepare relocation plan prior to construction of specified structures. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Plan Approval** : Submit plan for relocation of southwestern pond turtle 60 days prior to construction and submit resume of biologist prior to implementation. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-51. Bridges over the Santa Clara River shall be designed to minimize impacts to natural areas and riparian resources from associated lighting and stormwater runoff. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bolla rd lights, or other available light and glare minimization methods. Br idges will be designed to minimize normal vehicular lighting from trespassi ng 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.	CDFG	**Plan Requirements**. Proposed bridge design to include specified lighting and stormwater drainage requirements. Proposed bridge construction plans to be provided in conjunction with the required Sub-Notification procedure. **Reporting**: Prior to design and construction, submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-52. Prior to grading and construction activities, a qualified biologist shall be retained to conduct a Worker Environmental Awareness Program (WEAP) for all construction/contractor personnel. A list of construction personnel who have completed training prior to the start of construction shall be maintained on site and this list shall be updated as required when new personnel start work. No construction worker may work in the field for more than five days without participating in the WEAP. Night wo rk and use of lights on equipment shall not be allowed unless CDFG approves of the night work and use of lights. Lighting shall not be used where threatened or endangered species occur. Lights shall be directed from natural areas and remain 200 feet away from natural areas unless otherwise approved by CDFG. The	CDFG	**Measure Implementation**: Grading and construction plan notes shall include the requirements of this mitigation measure. **Field verification** : Equipment to be verified and documented as clean before delivery to project site. **Reporting**: The biologist shall notify CDFG when the required Worker Environmental Awareness Program training activities have be en conducted, including the names of persons that have participated in the training program. Submit WEAP list to CDFG. Submit field	

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qualified biologist shall provide ongoing guidance to construction personnel and contractors to ensure compliance with environmental/permit regulations and mitigation measures. The qualified biologist shall perform the following: ● Provide training materials and br iefings to all personnel working on site. The material shall include but not be limited to the identification and status of plant and wildlife species, significant natural plant community habitats (*e.g.*, riparian), fire protection measures, and review of mitigation requirements. ● A discussion of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Mi gratory Bird Treaty Act, other state or federal permit requirements and the legal consequences of non-compliance with these acts; ● Attend the pre-construction meeting to ensure that timing/location of construction activities do not conflict with other mitigation requirements (*e.g.*, seasonal surveys for nesting birds, pre-construction surveys, or relocation efforts); ● Conduct meetings with the contra ctor and other key construction personnel describing the importance of restricting work to designated areas. Maps showing the location of special-status wildlife or populations of rare plants, exclus ion areas, or other construction limitations (*e.g.*, limitations on nighttime work) will be provided to the environmental monitors and c onstruction crews prior to ground disturbance. This applies to precons truction activities, such as site surveying and staking, natural resources surveying or reconnaissance, establishment of water quality BMPs, and geotechnical or hydrological investigations; ● Discuss procedures for minimizing harm to or harassment of wildlife encountered during construction and provide a contact person in the event of the discovery of dead or injured wildlife; ● Review/designate the construction area in the field with the contractor in accordance with the final grading plan; ● Ensure that haul roads, access roads, and on-site staging and storage areas are sited within grading areas to minimize degradation of vegetation communities adjacent to these areas (if activities outside these limits are necessary, they shall be evaluated by the biologist to	CDFG	review report of the staking to CDFG. Keep a daily written log of vehicle/equipment washing and report (within 72 hours) to CDFG any conflicts or errors resulting in impacts to special-status biological resources.	

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ensure that no special-status species habitats will be affected); • Conduct a field review of the staking (to be set by the surveyor) designating the limits of all construction activity; • Flag or temporarily fence any construction activity areas immediately adjacent to riparian areas; • Ensure and document that required pre-construction surveys and/or relocation efforts have been implemented; • To reduce the potential for the spread of New Zealand mud snails exotic invasive invertebrates (e.g. New Zealand mud snails) and weeds (including weed seeds) during Project clearing and construction, all heavy equipment proposed for use on the Project site shall be verified cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the Project site. Equipment must be documented as mud snail exotic invasive invertebrate (e.g. mud snail) and weed free upon delivery to the Project site initial staging area, including: (1) vegetation clearing equipment (skid steer loaders, loaders, dozers, backhoes, excavators, chippers, grinders, and any hauling equipment, such as off-road haul trucks, flat bed, or other vehicles); (2) earth-moving equipment (scrapers, dozers, excavators, loaders, motor-graders, compactors, backhoes, off-road water trucks, and off-road haul trucks); and (3) all Project-associated vehicles (including personal vehicles) that, upon inspection by the monitoring biologist, are deemed to present a risk for spreading mud snails exotic invasive invertebrates (e.g. mud snails) or weeds. Equipment shall be cleaned at existing construction yards or at a wash station. The biological monitor shall document that all construction equipment (as described above) has been cleaned prior to working within the Project work site. Any equipment/vehicles determined to not be free of mud snails exotic invasive invertebrates (e.g. mud snails) and weeds shall immediately be sent back to the originating construction yard for washing, or wash station where rinse water is collected and disposed of in either a sanitary sewer or other legal point of disposal. Equipment/vehicles moved from the site must be inspected, and re-washed as necessary, prior to re-engaging in construction activities in the Project work area. A written daily log shall be kept for all vehicle/equipment washing that states the date, time, location, type of equipment washed, methods used, and location of work;	CDFG	**Measure Implementation**: Grading and construction plan notes shall include the requirements of this mitigation measure. **Field verification** : Equipment to be verified and documented as clean before delivery to project site. **Reporting**: The biologist shall notify CDFG when the required Worker Environmental Awareness Program training activities have been conducted, including the names of persons that have participated in the training program. Submit WEAP list to CDFG. Submit field review report of the staking to CDFG. Keep a daily written log of vehicle/equipment washing and report (within 72 hours) to CDFG any conflicts or errors resulting in impacts to special-status biological resources.	

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• Be present during initial vegetation clearing and grading; and • Submit to CDFG an immediate report (within 72 hours) of any conflicts or errors resulting in impacts to special-status biological resources.			
BIO-53. Prior to the issuance of a grading permit for ground disturbance, construction, or site preparation activities, the applicant shall retain the services of a qualified biologist to conduct pre-construction surveys for western spadefoot toad within all portions of the Project site containing suitable breeding habitat. Surveys shall be conducted during a time of year when the species could be detected (*e.g.*, the presence of rain pools). If western spadefoot toad is identified on the Project site, the following measures will be implemented. (1) Under the direct supervision of the qualified biologist, western spadefoot toad habitat shall be created within suitable natural sites on the Specific Plan site outside the proposed development envelope. The amount of occupied breeding habitat to be impacted by the Project shall be replaced at a 2:1 ratio. The actual relocation site design and location shall be approved by CDFG. The location shall be in suitable habitat as far away as feasible from any of the homes and roads to be built. The relocation ponds shall be designed such that they only support standing water for several weeks following seasonal rains in order that aquatic predators (*e.g.*, fish, bullfrogs, and crayfish) cannot become established. Terrestrial habitat surrounding the proposed relocation site shall be as similar in type, aspect, and density to the location of the existing ponds as feasible. No site preparation or construction activities shall be permitted in the vicinity of the currently occupied ponds until the design and construction of the pool habitat in preserved areas of the site has been completed and all western spadefoot toad adults, tadpoles, and egg masses detected are moved to the created pool habitat. (2) Based on appropriate rainfall and temperatures, generally between the months of February and April, the biologist shall conduct pre-construction surveys in all appropriate vegetation communities within the development envelope. Surveys will include evaluation of all previously documented occupied areas and a reconnaissance-level survey of the remaining natural areas of the site. All western spadefoot adults, tadpoles, and egg masses encountered shall be collected and released in the identified/created relocation ponds	CDFG	**Measure Implementation:** Conduct specified western spadefoot toad surveys and prior ground disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Reporting:** Submit monitoring reports to CDFG annually (April 1) until success criteria met for relocation site; CDFG to approve creation of spadefoot sites prior to relocation of animals. Monitor relocation sites for five years.	

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described above. (3) The qualified biologist shall monitor the relocation site for five years, involving annual mon itoring during and immediately following peak breeding season such that surveys can be conducted for adults as well as for egg ma sses and larval and post-larval toads. Further, survey data will be provided to CDFG by the monitoring biologist following each monitoring period and a written report summarizing the monitoring results will be provided to CDFG at the end of the monitoring effort. Success criteria for the monitoring program shall include verifiable evidence of toad reproduction at the relocation site.			
BIO-54. Prior to construction the applicant shall develop a relocation plan for coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake. The Plan shall include but not be limited to the timing and location of the surveys that w ould be conducted for each species; identify the locations where more inte nsive efforts should be conducted; identify the habitat and conditions in the proposed relocation site(s); the methods that would be utilized for trapping and relocating the individual species; and provide for the documentation/recordation of the species and number of the animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground disturbing activities within potentially occupied habitat. The Plan shall include the specific survey and relocation efforts that would occur for construction activities that occur both during the activity period of the special status species (generally March to November) and for periods when the species may be present in the work area but difficult to detect due to weather conditi ons (generally December through February). Thirty days prior to construction activities in coastal scrub, chaparral, oak woodland, riparian habitats, or other areas supporting these species qualified biologists sh all conduct surveys to capture and relocate individual coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake in order to avoid or minimize take of these special-status species. The plan shall require a minimum of three (3) surveys conducted during the time of year/day when each species is most likely to be observed. Individuals shall be relocated to nearby undisturbed areas with suitable habitat. If construction is scheduled to occur during the low activity period (generally December through February) the surveys shall	CDFG	**Measure Implementation:** Conduct specified reptile surveys, prepare relocation plan, and specify survey/ monitoring schedule prior to ground disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Plans Prepared** : Prepare relocation plan (including timing for each species) prior to construction. **Field Verification**: Perform monitoring 30 days prior to construction and daily during construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Submit Rosy boa relocation plan to CDFG. Submit reloca tion plan to CDFG 60 days prior to any ground disturbi ng activities. Submit survey reports to CDFG. Submit special-status reptile clearance daily log during construction and results of three pre-construction surveys included in annual mitigation report.	

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be conducted prior to this period if possible and exclusion fencing shall be placed to limit the potential for re-colonization of the site prior to construction. The qualified biologist will be present during ground-disturbing activities immediately adjacent to or within habitat that supports populations of these species . Clearance surveys for special-status reptiles shall be conducted by a qualified biologist prior to the initiation of construction each day. Results of the surveys and relocation efforts shall be provided to CDFG in the annual mitigation status report. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.			
BIO-55. a. As a supplement to BIO-1 through BIO-16, additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo will be provided for certain key habitat zones at higher ratios (identified as "key population areas" in **Figure 4.5-86** , Alternative 2 Impacts to Least Bell's Vireo Habitat). Southern willow scrub, southern cottonwood-willow riparian, arrow weed scrub, mulefat scrub, and Mexican elderberry scrub and woodland that provide nesting/foraging habitat for least Bell's vireo in "key population areas" shall be replaced or enhanced. All permanent loss to nesting/foraging habitat in key population areas shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss of foraging/nesting habitat in key population areas shall be mitigated at a 2:1 ratio. The requirements for replacing habitat by either creating new habitat or removing exotic species from existing habitat shall follow the procedures outlined in BIO-1 through BIO-16. To replace the lost functions of habitat located adjacent to the Santa Clara River due to noise impacts, all nesting/foraging habitat within the 60 dBA sound contour (associated with development site roadway improvements) shall be considered degraded. Nesting/foraging habitat within this area shall be mitigated at a ratio of 2:1. b. The loss of documented occupied nesting habitat for coastal California gnatcatcher shall be mitigated. If the coastal California gnatcatcher is identified nesting on site, the applicant will acquire or preserve nesting coastal California gnatcatcher habitat at a 3:1 ratio for impacts to documented occupied habitat, or by the ratio specified in BIO-2, whichever is greater. Mitigation acquisition shall occur at an agreed-upon location as approved by the USFWS upon consultation. The applicant shall enter into a binding legal agreement regarding the preservation of	CDFG	**Plans Prepared** : Supplemental habitat restoration/ acquisition plans for least Bell's vireo and California gnatcatcher to be submitted concurrently with applicable sub-notification (CDFG)/construction notification (Corps) letters for individual projects. **Plans Approved:** Prior to impacts to jurisdictional resources. **Field Verification:** Field inspect as necessary until restoration/enhancement success criteria are achieved. Perform monitoring quarterly until success criteria are met. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

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occupied habitat describing the terms of the acquisition, enhancement, and management of those lands.			
BIO-56. Within 30 days of ground-disturbing activities associated with construction or grading that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March through August in the Project region, or as determined by a qualified biologist), the applicant shall have weekly surveys conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the disturbance zone or within 300 feet (500 feet for raptors) of the disturbance zone. Pre-construction surveys shall include nighttime surveys to identify active rookery sites. The surveys shall continue on a weekly basis, with the last survey being conducted no more than seven days prior to initiation of disturbance work. If ground-disturbing activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than seven days will have elapsed between the survey and ground-disturbing activities. If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted, at the discretion of the biologist in consultation with CDFG, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In the event that golden eagles establish an active nest in the River Corridor SMA, the buffers will be established in consultation with CDFG. Potential golden eagle nesting will be reported to CDFG within 24 hours. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFG in the annual mitigation status report. For listed riparian songbirds (least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo) USFWS protocol surveys shall be conducted. If active nests are found, clearing and construction within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFG and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and	CDFG CDFG	**Measure Implementation:** Conduct specified bird surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Perform monitoring weekly within 30 days prior to construction during nesting season (typically March through August). Perform weekly monitoring of nests during construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met (except golden eagles and California gnatcatchers which require notification of CDFG within 24 hours).	

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there is no evidence of a second attempt at nesting. If no active nests are observed, construction may proceed. If active nests are found, work may proceed provided that construction activity is located at least 300 feet from active nests (or as authorized through the context of the Biological Opinion and 2081b Incidental Take Permit). This buffer may be adjusted provided noise levels do not exceed 60 dBA hourly Leq at the edge of the nest site as determined by a qualified biologist in coordination with a qualified acoustician. If the noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dBA Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to CDFG and USFWS. For coastal California gnatcatcher, the applicant shall conduct USFWS protocol surveys in suitable habitat within the Project area and all areas within 500 feet of access or construction-related disturbance areas. Suitable habitats, according to the protocol, include "coastal sage scrub, alluvial fan, chaparral, or intermixed or adjacent areas of grassland and riparian habitats." A permitted biologist shall perform these surveys according to the USFWS' (1997a) Coastal California Gnatcatcher Presence/Absence Survey Guidelines. If a territory or nest is confirmed, the USFWS and CDFG shall be notified immediately. If present, a 500-foot disturbance-free buffer shall be established and demarcated by fencing or flagging. No Project activities may occur in these areas unless otherwise authorized by USFWS and CDFG. Construction activities in suitable gnatcatcher habitat will be monitored by a full-time qualified biologist. The monitoring shall be of a sufficient intensity to ensure that the biologist could detect the presence of a bird in the construction area.	CDFG	**Measure Implementation:** Conduct specified bird surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Perform monitoring weekly within 30 days prior to construction during nesting season (typically March through August). Perform weekly monitoring of nests during construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met (except golden eagles and California gnatcatchers which require notification of CDFG within 24 hours).	

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BIO-57. Thirty days prior to construction activities, a qualified biologist shall conduct CDFG protocol surveys to determine whether the burrowing owl is present at the site. The surveys shall consist of three site visits and shall be conducted in areas dominated by field crops, disturbed habitat, grasslands, and along levee lo cations, or if such habitats occur within 500 feet of a construction zone. If located, occupied burrows shall not be disturbed during the nesti ng season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from th e occupied burrows are foraging independently and are capable of independent survival. If the burrowing owl is detected but nesting is not occurring, construction work can proceed after any owls have been evacuated from the site using CDFG-approved burrow closure procedures and after alternative nest sites have been provided in accordance with the CDFG Staff Report on Burrowing Owl Mitigation (10-17-95). Unless otherwise authorized by CDFG , a 500-foot buffer, within which no activity will be permissible, will be maintained between Project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently. Results of the surveys and relocation efforts shall be provided to CDFG in the annual mitigation status report.	CDFG	**Measure Implementation:** Conduct specified burrowing owl surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Conduct surveys 30 days prior to construction. If burrowing owl is nesting, may need to need CDFG approval for construction within 500 feet. **Reporting**: Submit reports annually (by April 1) to CDFG as part of mitigation status report until success criteria are met. During seed collection (two years following project approval) notify CDFG within 24 hours if adaptive management thresholds are triggered; get CDFG approval for alternative nest sites.	
BIO-58. Thirty days prior to constructio n activities in gr assland, scrub, chaparral, oak woodland, riverbank, and agriculture habitats, or other suitable habitat a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for San Diego bl ack-tailed jackrabbit and San Diego desert woodrat. If San Diego black-tailed jackrabbits are present, non-breeding rabbits shall be flushed from areas to be dist urbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged and ground-disturbing activities avoided within a minimum of 200 feet during the pup-rearing season (February 15 through July 1). This buffer may be reduced based on the location of the den upon consultation with CDFG. Occupied maternity dens, depressi ons, 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	CDFG	**Measure Implementation:** Conduct specified San Diego black-tailed jackrabbit and desert woodrat surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Perform surveys within 30 days of construction activities and when construction activities will occur near active nest areas. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Report (within 72 hours) to CDFG any occurrences of San Diego black-tailed jackrabbit, and document all woodrat nest relocations.	

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habitat by a qualified biologist. The applicant shall document all San Diego black-tailed jackrabbit identified, avoided, or moved and provide a written report to CDFG within 72 hours. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits. If active San Diego desert woodrat nests (stick houses) are identified within the disturbance zone or within 100 feet of the disturbance zone, a fence shall be erected around the nest site adequate to provide the woodrat sufficient foraging habitat at the discretion of the qualified biologist in consultation with CDFG. Clearing and construction within the fenced area will be postponed or halted until young have left the nest. The biologist shall serve as a construction monitor during those periods when disturbance activities will occur near active nest areas to ensure that no inadvertent impacts to these nests will occur. If avoidance is not possible, the applicant will take the following sequential steps: (1) all understory vegetation will be cleared in the area immediately surrounding active nests followed by a period of one night without further disturbance to allow woodrats to vacate the nest, (2) each occupied nest will then be disturbed by a qualified wildlife biologist until all woodrats leave the nest and seek refuge off site, and (3) the nest sticks shall be removed from the Project site and piled at the base of a nearby hardwood tree (preferably a coast live oak or California walnut). Relocated nests shall not be spaced closer than 100 feet apart, unless a qualified wildlife biologist has determined that a specific habitat can support a higher density of nests. The applicant shall document all woodrat nests moved and provide a written report to CDFG. All woodrat relocation shall be conducted by a qualified biologist in possession of a scientific collecting permit.	CDFG	**Measure Implementation:** Conduct specified San Diego black-tailed jackrabbit and desert woodrat surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Perform surveys within 30 days of construction activities and when construction activities will occur near active nest areas. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Report (within 72 hours) to CDFG any occurrences of San Diego black-tailed jackrabbit, and document all woodrat nest relocations.	
BIO-59. Road undercrossings will be built in accordance with accepted design criteria to allow the passage of mountain lions and mule deer. The applicant shall prepare a Wildlife Movement Corridor Plan that specifically addresses wildlife movement corridors at San Martinez Grande, Chiquito Canyon, and Castaic Creek, which shall be monitored for one year prior to construction of the SR-126 widenings. The Plan shall address current movement that is occurring, the methods that will be implemented to provide for passage, including lighting, fencing, vegetation planting, the installation of bubblers to encourage wildlife usage, and the size of the passage. The applicant shall install motion cameras at these locations in consultation with CDFG and monitor these	CDFG	**Plan Requirements:** A Wildlife Movement Corridor Plan shall include an implementation schedule and proposed corridor design criteria **Plan Preparation**: Prepare Wildlife Movement Corridor Plan prior to development. **Field Verification:** Monitor for one year wildlife movement at San Martinez Grande, Chiquito Canyon, and Castaic Creek prior to widening of SR-126, and for two years after constructing improvements. Monitor wildlife movement for one year at initiation of RMDP	

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passages for a period of two years subsequent to constructing improvements. A report of the wildlife documented to utilize these crossings shall be provided to CDFG annually. In addition, the Salt Creek crossing west of the Project area will be enhanced prior to initiation of construction in Long Canyon (southern portion of the Homestead Village). This crossing will be monitored for one year at the initiation of RMDP development, for two years at the time the crossing is enhanced, and then for three years after Project build-out. Prior to the construction of adjacent developments, signs will be placed along the roads indicating potential wildlife crossings where mountain lions and mule deer are likely to cross.	CDFG	development, for two years after constructing improvements, and for three years after Project build-out. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Report of the wildlife documented to utilize these crossings provided annually to CDFG until success criteria are met.	
BIO-60. Thirty days prior to construction activities, a qualified biologist shall conduct a pre-construction survey for mountain lion natal dens. The survey area shall include the construction footprint and the area within 2,000 feet of the Project disturbance boundaries. Should an active natal den be located, the applicant shall cease work within 2000 feet and inform CDFG with 24 hours. No construction activities shall occur in the 2000 foot buffer until a qualified biologist in consultation with CDFG establishes an appropriate setback from the den that would not adversely affect the successful rearing of the cubs. No construction activities or human intrusion shall occur within the established setback until the cubs have been successfully reared or the cats have left the area.	CDFG	**Measure Implementation:** Conduct specified mountain lion natal den surveys within 30 days of ground-disturbing or construction activities. Required follow-up procedures to be conducted until the cubs have cubs have been reared or the cats have left the area. **Field Verification:** Conduct surveys 30 days prior to construction. **Reporting**: Submit survey results to CDFG.	
BIO-61. No earlier than 30 days prior to the commencement of construction activities, a pre-construction survey shall be conducted by a qualified biologist to determine if active roosts of ~~special-status~~ bats are present on or within 300 feet of the Project disturbance boundaries. Should an active maternity roost be identified (in California, the breeding season of native bat species is generally from April 1 through August 31), the roost shall not be disturbed and construction within 300 feet shall be postponed or halted, until the roost is vacated and juveniles have fledged. Surveys shall include rocky outcrops, caves, structures, and large trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). Trees and rocky outcrops shall be surveyed by a qualified bat biologist (*i.e.*, a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle bats). If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (*i.e.*, not removed) by the Project. If avoidance of the maternity roost must occur, the bat biologist shall survey (through the use of radio telemetry or other CDFG approved methods) for nearby	CDFG	**Measure Implementation:** Conduct specified bat surveys within 30 days of ground-disturbing or construction activities. Conduct required follow-up procedures as necessary. **Field Verification:** Perform surveys 30 days prior to construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Notify CDFG if maternity roosting sites occur within the development area, or if any hibernacula or active nurseries occur within the development zone.	

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alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of CDFG that there are alternative roost sites used by the maternity colony and young are not present then no further action is required. If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Large concrete walls (*e.g.*, on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative potential roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. CDFG shall also be notified of any hibernacula or active nurseries within the construction zone. If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (*e.g.*, installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist in consultation with CDFG shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (*i.e.,* there shall be no less or more than one night between initial disturbance and the grading or tree removal). These actions should allow bats to leave during nighttime hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. If an active maternity roost is located on the Project site, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (*i.e.*, prior to March 1) or after young are flying (*i.e.*, after July 31) using the exclusion techniques described above.	CDFG	**Measure Implementation:** Conduct specified bat surveys within 30 days of ground-disturbing or construction activities. Conduct required follow-up procedures as necessary. **Field Verification:** Perform surveys 30 days prior to construction. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Notify CDFG if maternity roosting sites occur within the development area, or if any hibernacula or active nurseries occur within the development zone.	

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BIO-62. At least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO in fee and/or by conservation easement. These 1,900 acres of the Open Area will be left as natural vegetation. Dedication of open areas lands shall be reported annually to CDFG.	CDFG	**Offers of Dedication:** The Open Area portion of the Specific Plan site shall be offered for dedication in three approximately equal phases of approximately 633 acres each proceeding from north to south, as follows: (1) The first offer of dedication will take place with the issuance of the 2,000 th residential building permit of Newhall Ranch; (2) The second offer of dedi cation will take place with the issuance of the 6,000 th residential building permit of Newhall Ranch; and (3) The remaining offer of dedication will be completed by the 11,000th residential building permit of Newhall Ranch. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Provide a quarterly report to CDFG indicating the number of residential building permits issued on the Specific Plan site by subdivision map number.	
BIO-63. Each tract map Home Owners' Association shall supply educational information to future residents regarding pets, wildlife, and open space areas. The material shall discuss the presence of native animals (*e.g.*, coyote, bobcat, and mountain lion), indicate that those native animals could prey on pets, indi cate that no actions shall be taken against native animals should they prey on pets allowed outdoors, and indicate that pets must be leashed while using the designated trail system and/or in any areas within or adjacent to open space. Control of stray and feral cats and dogs will be conducted in open space areas on an as-needed basis by the NLMO(s) or the Newhall Ranch *joint powers authority* (JPA) managing the River Corridor SM A, High Country SMA, or Salt Creek area or by the HOAs managing the Open Areas. Feral cats and dogs may be trapped and deposited with the local Society for the Prevention of Cruelty to Animals or the Los Angeles County Department of Animal Control.	CDFG	**Measure Implementation.** At minimum, the specified educational information shall be included in the Department of Real Estate Public Report provided to prospective home purchasers. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-64. An integrated pest management (IPM) plan that addresses the use of pesticides (including rodenticides and insecticides) on site will be prepared prior to the issuance of building permits for the initial tract map. The IPM will implement appropriate Best Management Practices to	CDFG	**Plan Approved:** Prior to issuance of building permits for the initial tract map. **Reporting**: Submit reports annually (by April 1) to CDFG	

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avoid and minimize adverse effects on the natural environment, including vegetation communities, special-status species, species without special status, and associated habitats, including prey and food resources (*e.g.*, insects, small mammals, seeds). Potential management practices include 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.	CDFG until success criteria are met.		
BIO-65. Pre-construction surveys for San Emigdio blue butterfly shall occur in all areas containing host plants in sufficient density to support this species. A qualified Lepidopterist or a biologist shall conduct focused surveys at a time of year and during weather conditions when the detection of eggs, larvae, or adults is possible. All occupied habitat shall be mapped and the locations provided to CDFG. Should the removal of quail brush or other documented host plants from occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas be required, the plants shall be removed when eggs and larvae are not present (*i.e.*, mid-September to March). Removal of quail brush plants from the documented habitat in Potrero Canyon may only be conducted from April through early September if it is determined by a qualified biologist that eggs and/or larvae are not present on the plants to be removed.	CDFG	**Measure Implementation:** Conduct specified San Emigdio blue butterfly surveys prior to ground-disturbing activities in areas containing sufficient densities of host plants. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** Perform pre-construction surveys. **Reporting**: Submit survey report to CDFG prior to construction.	
BIO-66. The removal of quail brush or other documented host plants from any occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas shall be replaced at a minimum of a 1.5:1 ratio. The replacement plants shall be planted contiguous to the existing quail brush plants associated with the San Emigdio blue butterfly habitat. The success of the replanting shall be monitored for survival and vigor consistent with survivorship requirements of Mitigation Measure BIO-6 and BIO-7.	CDFG	**Revegetation/Restoration Acceptance:** After specified criteria have been achieved. **Field Verification:** Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-67. Prior to any construction activities occurring within 200 feet of any occupied San Emigdio blue butterfly habitat in Potrero Canyon or	CDFG	**Measure Implementation:** Grading and construction plan notes shall include the requirements of this	

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other areas, the boundaries of preserved areas of the habitat shall be clearly marked with flagging. The flagging would serve to identify the boundaries of the habitat to construction personnel and to prevent the inadvertent construction-related loss of quail brush or other host plants associated with the habitat. Construction personnel working in the area shall be informed that the removal of or damage to any flagged quail brush or other host plants located outside the disturbance footprint is prohibited.	CDFG	mitigation measure. Flagging to be provided prior to the start of ground disturbing activities. **Field Verification:** Field inspect as necessary throughout construction period. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-68. Any common or special-status species bat day roost sites found by a qualified biologist during pre-construction surveys conducted per BIO-61, to be directly (within project disturbance footprint) or indirectly (within 300 feet of project disturbance footprint) impacted are to be mitigated with creation of artificial roost sites. The Project applicant shall establish (an) alternative roost site(s) within suitable preserved open space located at an adequate distance from sources of human disturbance.	CDFG	**Measure Implementation:** Required replacement roost sites shall be established prior to occupancy of structures that resulted in the impact. **Field Verification:** Field inspect prior to occupancy. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-69. The Newhall Ranch JPA will have overall responsibility for recreation within and conservation of the High Country. The Newhall Ranch JPA and ~~Project applicant and/or~~ NLMO shall develop and implement a conservation education and citizen awareness program for the High Country SMA informing the public of the special-status resources present within the High Country SMA and providing information on common threats posed by the presence of people and pets to those resources. The NLMO shall install trailhead and trail signage indicating the High Country SMA is a biological conservation area and ~~requesting~~ advising that people and their animals must stay on existing trails at all times and that violators may be cited. The NLMO shall provide quarterly maintenance patrols to remove litter and monitor trail expansion and fire hazards within the High Country SMA, funded by the JPA.	CDFG	**Measure Implementation:** Information program shall be available for dissemination and signage to be installed prior to occupancy of residences adjacent to the High Country SMA. **Field Verification:** Field inspect as required. Perform quarterly monitoring and removal of litter, trail expansion, fire hazards. **Reporting:** Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-70 Construction plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction. In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP) shall include the following minimum BMPs. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during construction. At a minimum, the following measures/	CDFG	**Measure Implementation:** Construction plan notes shall include the requirements of this mitigation measure. **Field Verification:** Field inspect as necessary throughout construction. **Reporting:** Submit reports annually (by April 1) to CDFG showing compliance with this mitigation measure.	

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restrictions shall be incorporated into the SWPPP, and noted on construction plans where appropriate, to avoid impacting special-status species during construction: • Avoid planting or seeding invasive species in development areas within 200 feet of native vegetation communities. • Provide location and details for any dust control fencing along Project boundaries (BIO-71). • Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the 404 Permit or 1603 Agreement. • Silt settling basins installed during the construction process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes. • If a stream channel has been altered during the construction and/or maintenance operations, its low flow channel shall be returned as nearly as practical to pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre-Project grade, to the extent practical, unless it represents a wetland restoration area. • Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur. • Staging/storage areas for construction equipment and materials shall be located outside of the ordinary high water mark. • Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water. • Stationary equipment such as motors, pumps, generators, and welders which may be located within the riverbed construction zone shall be positioned over drip pans. No fuel storage tanks shall be allowed in the riverbed.	CDFG	**Measure Implementation:** Construction plan notes shall include the requirements of this mitigation measure. **Field Verification:** Field inspect as necessary throughout construction. **Reporting:** Submit reports annually (by April 1) to CDFG showing compliance with this mitigation measure.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
• No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any construction, or associated activity of whatever nature, shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the permit. When construction operations are completed, any excess materials or debris shall be removed from the work area. • No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow. • The operator shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. • The operator shall not permit pets on or adjacent to the construction site. • No guns or other weapons are allowed on the construction site during construction, with the exception of the security personnel and only for security functions. No hunting shall be authorized/permitted during construction.	CDFG	**Measure Implementation:** Construction plan notes shall include the requirements of this mitigation measure. **Field Verification:** Field inspect as necessary throughout construction. **Reporting:** Submit reports annually (by April 1) to CDFG showing compliance with this mitigation measure.	
BIO-71. Development areas shall have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where construction activities occur within 100 feet of known special-status plant species locations, chemical dust suppression shall not be utilized. Where determined necessary by a qualified biologist, a screening fence (*i.e.*, a six-foot-high chain link fence with green fabric up to a height of five feet) shall be installed to protect special-status species locations. See BIO-32 for dust control requirements related to spineflower preserves.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Qualified biologist to field inspect as necessary throughout grading phase. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-72. Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within 2100 feet of native vegetation communities shall be reviewed by a qualified restoration specialist to ensure that the proposed landscape plants will not naturalize and require maintenance or cause vegetation community degradation in the open space areas (River Corridor SMA, High Country SMA, Salt Creek area, and natural portions of the Open	CDFG	**Measure Implementation** : Landscape plan notes shall include the requirements of this mitigation measure. Landscape plans to be reviewed and approved by a qualified restoration specialist prior to the start of grading activities. Restoration specialist shall inspect container plants prior	

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Area). Container plants to be installed within public areas within 2 100 feet of the open space areas shall be inspected by a qualified restoration specialist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, landscape plants within 1 200 feet of native vegetation communities shall not be on the Cal-IPC California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants listed in Appendix B of the SCP. The current Cal-IPC list can be obtained from the Cal-IPC web s ite (http://www.cal-ipc.org/ip/inventory/index.php). Landscape plans will include a plant palette composed of native or non-native, non-invasive species that do not require high irrigation rates. Except as required for fuel modification, irrigation of perimeter landscapi ng shall be limited to temporary irrigation (*i.e.*, until plants become established).	CDFG to installation.	**Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-73. Permanent fencing shall be in stalled along all River Corridor SMA trails adjacent to the Santa Clara River, or other sensitive resources, in order to minimize impacts associ ated with increased human presence on protected vegetation communities and special-status plant and wildlife species. The fencing will be split rail to avoid inhibiting wildlife movement. Viewing platforms will be located in land covers currently mapped as agriculture, disturbed land, or developed land.	CDFG	**Measure Implementation** : Tract map improvement plans to depict the location and design of required fencing and viewing platforms. **Field Verification:** Review fencing and viewing platform installation for plan compliance. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-74. To protect Middle Canyon Spring and to reduce potential direct impacts to any special-status species that may be located within the spring complex due to unrestricted ac cess, the Project applicant or its designee shall avoid all construction-related activities within the Middle Canyon Spring complex and erect and maintain temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to and during all phases of construction within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. A qualified biologi st will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. The areas behind the temporary fenci ng shall not be used for the storage of any equipment, materials, construction debris, or anything associated with construction activities. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. Following the final phase of cons truction of any Newhall Ranch subdivision tract adjacent to Middle Canyon Spring, the Project applicant	CDFG	**Measure Implementation:** Grading, drainage and construction plans for the Middle Canyon Spring area shall depict the location and provide installation details regarding temporary and permanent fencing and signs. **Field Verification:** Biologist monitor to be on-site as required and to provide annual monitoring reports to CDFG. Perform ongoing maintenance of temporary fence, as well as permanent fence and signs. **Reporting:** Submit reports annually (by April 1) to CDFG until success criteria are met.	

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or its designee shall install and maintain permanent fencing along the subdivision tract bordering the spring. Permanent signage shall be installed on the fencing along the spring boundary to indicate that the fenced area is a biological preserve that contains protected species and habitat. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring. a. As described in BIO-51, the Commerce Center Drive Bridge will be designed to minimize secondary impacts associated with lighting and water quality impacts through the installation of indirect and downcast lighting, and routing of stormwater to water quality treatment facilities.	CDFG	**Measure Implementation:** Grading, drainage and construction plans for the Middle Canyon Spring area shall depict the location and provide installation details regarding temporary and permanent fencing and signs. **Field Verification:** Biologist monitor to be on-site as required and to provide annual monitoring reports to CDFG. Perform ongoing maintenance of temporary fence, as well as permanent fence and signs. **Reporting:** Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-75. Focused surveys for the undescribed species of everlasting (a special-status plant species) shall be conducted by a qualified botanist prior to the commencement of grading/construction activities wherever suitable habitat (primarily river terraces) could be affected by direct, indirect, or secondary construction impacts. The surveys shall be conducted no more than one year prior to commencement of construction activities within suitable habitat, and the surveys shall be conducted at a time of year when the plants can be located and identified. Should the species be documented within the Project boundary, avoidance measures shall be implemented to minimize impacts to individual plants wherever feasible. These measures shall include minor adjustments to the boundaries/location of haul routes and other Project features. If, due to Project design constraints, avoidance of all plants is not possible, then further measures, described in BIO-76, shall be implemented to salvage seeds and/or transplant individual plants. All seed collection and/or transplantation methods, as well as the location of the receptor site for seeds/plants (assumed to be within preserved open space areas of Newhall Ranch along the Santa Clara River), shall be coordinated with CDFG prior to impacting known occurrences of the undescribed everlasting.	CDFG	**Measure Implementation:** Conduct specified surveys for the undescribed species of everlasting no more than one year prior to ground-disturbing activities in areas with suitable habitat. Required follow-up procedures to be conducted prior to and throughout construction period. **Field Verification:** Seed collection and/or transplantation will be coordinated with CDFG prior to impacting known occurrences. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-76. For any individual project, or any phase of an individual project, to be located where undescribed everlasting plants may occur (*i.e.*, the sites identified in this EIS/EIR and any new sites discovered by preconstruction surveys, per BIO-75, or other future field surveys), Newhall Land shall prepare and implement an Undescribed Everlasting Mitigation and Monitoring Plan prior to the issuance of grading permits. The Plan shall provide for replacement of individual plants to be removed at a minimum 1:1 ratio, within suitable habitat at a site where no	CDFG	**Plan Requirements:** Prepare and implement an Undescribed Everlasting Mitigation and Monitoring Plan prior to the issuance of grading permits for areas that are known contain this plant. **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/ enhancement success criteria are achieved.	

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future construction-related disturbance will occur. The plan shall specify the following: (1) the location of the mitigation site in protected/ preserved areas within the Specific Plan site; (2) methods for harvesting seeds or salvaging and transplanta tion of individual plants to be impacted; (3) measures for propagating plants (from seed or cuttings) or transferring living specimens from the salvage site to the introduction site; (4) site preparation procedures for the mitigation site; (5) a schedule and action plan to maintain and monitor the mitigation area; (6) the list of criteria and performance standards by which to measure the success of the mitigation site (below); (7) meas ures to exclude unauthorized entry into the mitigation areas; and (8) c ontingency measures such as erosion control, replanting, or weeding to implement in the event that mitigation efforts are not successful. The performance standards for the Undescribed Everlasting Mitigation and Monitoring Plan shall be the following: a. Within four years after reintroducing the undescribed everlasting to the mitigation site, the extent of occupied acreage and the number of established, reproductive plants will be no smaller than at the site lost for project construction. b. Non-native species cover will be no more than 5% absolute cover through the term of the restoration. c. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana*), and any species listed on the California St ate Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site as of the date of completion approval.	CDFG	**Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-77. A Middle Canyon Spring Habitat Management Plan will be developed that details the measures to be implemented to maintain the populations of the ~~undescribed~~ spring snail ***(Pyrgulopsis castaicensis* n. sp.)** and u~~ndescribed~~ Newhall sunflower species. The plan shall be subject to the approval of CDFG and implemented by Newhall Land prior to disturbance within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of Middle Canyon Spring. The plan shall include the following elements: (1) collection of data on existing site conditions; (2) construction monitoring program and a post-development monitoring program; (3) threshold parameters that activate adaptive management measures across a series of potential future scenarios, including water quality and water quantity scenarios, including the potential use of infiltration wells, if these should become necessary to ensure water	CDFG	**Plan Requirements:** Prepare and implement each of the elements described as part of a Middle Canyon Spring Habitat Management Plan prior to the issuance of a grading permit for construction near the spring (Commerce Center Drive bridge and Mission Village). **Plan Preparation**: Prepare and plan prior to development. **Plan Approved**: Seek CDFG approval of plan prior to implementation. **Field Verification:** Perform monitoring during construction and in perpetuity. Upon approval of the	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
quantity; (4) measures to exclude unauthorized entry into the spring; and (5) contingency measures in the event that management efforts are not successful. Plan elements are further described below: **Pre-development data collection:** Upon approval of the proposed Project, data collection for Middle Canyon Spring and its biotic community will be initiated. Site assessments will be completed by biologists and, as needed, with surveyors, engineers, geologists, and hydrogeologists to collect the following data, subject to limitations on disturbances: (1) inventory of plant species within and adjacent to the spring; (2) percent native and non-native plant cover and percent bare ground within and adjacent to the spring using the relevé method, a visual estimation technique to classify and map large vegetation areas in a limited amount of time (see below); (3) structural description of vegetation communities within each relevé plot; (4) GPS mapping of all trees within core spring area and adjacent 100 feet; (5) GPS mapping of special-status sunflower; (6) census special-status sunflower stem numbers; (7) description of any disturbances to the spring area; (8) establishment of permanent photo points; (9) photo documentation of seasonal changes in the spring; (10) survey and mapping of hydrologic and topographic features in the area adjacent to the spring; (11) population data on the *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snail~~, including distribution, abundance, density, size classes and seasonal activity, and microhabitat descriptions; (12) invertebrates survey; (13) amphibian survey; (14) characterization of algal and microbial components; (15) survey of spring inlet and outlets for comparison to piezometer water elevations from monitoring points P-1MS, P-2MS, and P-8B; (16) flow rates of spring outlets at a frequency to record diurnal fluctuations; (17) approximate evapotranspiration rates of the vegetation community; (18) piezometer water elevation data from P-1MS, P-2MS, and P-8B collected at a frequency suitable to determine seasonal variations in groundwater elevations; (19) continuously recorded surface water temperature and depth profile at a spring monitoring location and piezometers P-1MS and P-2MS; (20) water quality/chemistry data in the spring and the three nearby piezometers (P-1MS, P-2MS, and P-8B) (dissolved oxygen [DO, spring only], salinity, pH and alkalinity, nitrates, sulfates, relevant cations and anions [bicarbonate, calcium, chloride, magnesium, nitrate as NO3, potassium, sodium], total dissolved solids [TDS], turbidity [spring only], and suspended solids [spring only]); (21) soil samples along the margin of the spring to determine soil classification types; and (22) as available,	CDFG	proposed Project, initiate data collection for Middle Canyon Spring. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. During seed collection (during two years following project approval), notify CDFG within 24 hours if adaptive management thresholds are triggered.	

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compilation of a record of historic al photographs and aerial photographs of the spring and adjacent areas. Vegetation data will be collected using a non-invasive monitoring method and analyzed in accordance with the California Native Plant Society (CNPS) *Relevé Protocol* (2004), which provides for a visual assessment of vegetation communities instead of the more intrusive point-intercept transect methods. Th is will ensure that collection of vegetation data will limit damage to the spring vegetation and limit the establishment of trails during monitoring visits. Additionally, for two years following approval of the proposed Project, the applicant, in consultation with CDFG, shall provide for the collection of seed from the ~~undescribed~~ Newhall sunflower species by a qualified research institution for long-term seed bank preservation or other conservation purposes. Further, to faci litate additional research of the species, applicant shall allow CDFG access to the spring complex for future conservation purposes. Prior to establishing the post-d evelopment long-term thresholds discussed below, hydrologic and biologic data will be evaluated, and any increase or decrease greater than 10% in monitoring parameters 2, 11 through 16, and 18 through 20, described above, will serve as an interim threshold and will trigger adaptive ma nagement measures, such as those described below. Should these thres holds be triggered, CDFG will be notified within 24 hours to determine what actions, if necessary, will be implemented. Biological data collection will contribute to the establishment of habitat criteria necessary for sustaining the *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snail~~ and the un~~described~~ Newhall sunflower. **Construction monitoring program and data collection** Data collection described above will continue during construction near the spring complex (Commerce Center Drive Bridge and development of Middle Canyon (Mission Village planning area)). Monitors will be on site daily when work is conducted w ithin 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, and weekly during mass grading of Middle Canyon, to observe and report on construction activities. Monitors will ensure that appropriate avoidance and minimization measures are implemented, such as the installation and maintenance of perimeter construction fencing and storm water controls, silt fences, and sand bags. During any period where dewatering occurs	CDFG	**Plan Requirements:** Prepare and implement each of the elements described as part of a Middle Canyon Spring Habitat Management Plan prior to the issuance of a grading permit for construction near the spring (Commerce Center Drive bridge and Mission Village). **Plan Preparation**: Prepare and plan prior to development. **Plan Approved**: Seek CDFG approval of plan prior to implementation. **Field Verification:** Perform monitoring during construction and in perpetuity. Upon approval of the proposed Project, initiate data collection for Middle Canyon Spring. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. During seed collection (during two years following project approval), notify CDFG within 24 hours if adaptive management thresholds are triggered.	

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within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, biological and hydrologic parameters will be monitored daily. No dewatering activities shall occur in the spring complex. Discharge of any dewatering waters, nuisance irrigation flows, water quality basin, subdrain, backdrain, or toe drain flows shall be directed away from the spring. **Post-development data collection** Biological and hydrologic monitoring will continue post-development. For the first two years after build-out of Middle Canyon (Mission Village), post-construction monitoring will be as frequent as during the pre-construction period. After the two-year period, data collected and the frequency of monitoring may be adjusted, in consultation with CDFG. The post-development monitoring program will continue to collect data on trends and changes in the populations of the *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snail~~ and un~~described~~ Newhall sunflower and document any shift in spring habitat composition or any changes in conditions that would potentially impact the spring system, as detailed above. Analysis and comparison of collected data will establish long-term thresholds. These thresholds will serve to trigger adaptive management measures during the post-development period. **Adaptive management** As dictated by the thresholds discussed above, the following measures may be implemented after consultation with CDFG in the event a threshold is exceeded. These actions may include, but are not limited to: (1) the addition of supplemental water via an existing deep Saugus well in Middle Canyon; (2) removal of infiltration water by diverting flow from upstream water quality features; (3) implementing invasive species control; and (4) implementing additional controls to prevent unauthorized access to the spring complex. **Monitoring report** Annual monitoring reports will be prepared to summarize the status of the *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snail~~ and u~~ndescribed~~ Newhall sunflower and hydrology within Middle Canyon Spring. These reports will be used to evaluate the significance of impacts and the efficacy of mitigation measures. Reports will include results of biological surveys, flow data, groundwater modeling results, water quality data, mapping of the spring features and biota, photo-documentation from permanent photo points, analysis of field and lab data, conclusions based	CDFG	**Plan Requirements:** Prepare and implement each of the elements described as part of a Middle Canyon Spring Habitat Management Plan prior to the issuance of a grading permit for construction near the spring (Commerce Center Drive bridge and Mission Village). **Plan Preparation**: Prepare and plan prior to development. **Plan Approved**: Seek CDFG approval of plan prior to implementation. **Field Verification:** Perform monitoring during construction and in perpetuity. Upon approval of the proposed Project, initiate data collection for Middle Canyon Spring. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. During seed collection (during two years following project approval), notify CDFG within 24 hours if adaptive management thresholds are triggered.	

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on ongoing monitoring efforts, a nd recommendations for future management actions. Annual monitoring reports will be submitted to CDFG and Corps.			
BIO-78. A cowbird trapping program shall be implemented once vegetation clearing begins and maintained throughout the construction, maintenance, and monitoring period of the riparian restoration sites. A minimum of five traps shall be utilized, with at least one trap adjacent to the project site and one or two trap s located at feeding areas or other CDFG-approved location. The trappi ng contractor may consult with CDFG to request modification of the trap location(s). CDFG must approve any relocation of the traps. Traps will be maintained beginning each year on April 1 and concluding on/or about November 1 (may conclude earlier, depending upon weather conditions and results of capture). The trapping contractor may also consult CDFG on a modified, CDFG-approved trapping schedule modi fication. The applicant shall follow CDFG and USFWS protocol. In the event that trapping is terminated after the first few year s, subsequent phases of the RMDP development will require initiation of trapping surveys to determine whether re-establishment of the trapping program is necessary.	CDFG	**Measure Implementation**: Cowbird trapping to occur in conjunction with approved ripari an restoration projects. CDFG to approve the proposed trapping program and suggested revisions to the approved program. **Field Verification:** Provide trapping program results to CDFG. **Reporting**: Submit reports annually (by April 1) to CDFG (each year trapping occurs) until success criteria are met. CDFG must approve any relocation of traps.	
BIO-79. The status of the Potrero Canyon San Emigdio blue butterfly colony shall be monitored by a qualified biologist for a period of five years after Potrero Canyon Road construction completion/operation commencement to evaluate whether the operation of the road may be contributing to a population declin e in the colony. Should it be determined that a population decline is occurring, habitat creation for the San Emigdio blue butterfly shall be implemented in suitable locations contiguous to the habitat but away from the road. A habitat creation plan will be prepared that details the location and methods for creating habitat, that specifies success criteria, and that describes measures that will be implemented in the event that the habitat creation does not stabilize the San Emigdio blue butterfly population.	CDFG	**Measure Implementation**: Prepare and submit annual monitoring reports regarding the San Emigdio blue butterfly colony after the completion of Potrero Canyon Road. If required, a habitat creation plan will be prepared and submitted to CDFG for review and approval. **Plan Preparation** : Prepare and implement a habitat creation plan if a population decline occurs. **Field Verification:** Field inspect specified until restoration/enhancement success criteria are achieved. Perform annual monitoring for five years. **Reporting**: Submit reports annually (by April 1) to CDFG for five years of surveys, then annually until success criteria are met.	
BIO-80. The Project applicant will retain a qualified biologist to develop an Exotic Wildlife Species Control Plan and implement a control program for bullfrog, African clawed frog, and crayfish. The program will require the control of these sp ecies during construction within the River corridor and modified tributaries (bridges, diversions, bank	CDFG	**Plan Requirements**: Prepare an Exotic Wildlife Species Control Plan for CDFG review and approval prior to the start of construction within the River and modified tributaries. **Plan Preparation**: Develop plan prior to construction for	

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stabilization, drop structures). The Plan shall include a description of the species targeted for eradication, the methods of harvest that will be employed, the disposal methods, and the measures that would be employed to avoid impacts to sensitive wildlife (*e.g.*, stickleback, arroyo toad, nesting birds) during removal activities (*i.e.*, timing, avoidance of specific areas). Annual monitoring shall occur for the first five years after construction of Project facilities. After five years, bi-annual monitoring shall occur ~~for up to 50 years~~ in perpetuity to determine if additional control is necessary. The Project applicant will fund an endowment, approved by CDFG, for monitoring in perpetuity. Monitoring will be conducted within sentinel locations along the River Corridor SMA and where the Project provides potential habitat for these species (*e.g.*, future ponds and water features). Control shall be conducted within Project facilities where monitoring results indicate that exotic species have colonized an area.	CDFG	use during construction. **Field Verification:** Perform monitoring annually for five years, then bi-annually in perpetuity. **Reporting**: Submit reports to CDFG each year monitoring occurs.	
BIO-81. The installation of new, or relocation of existing, utility poles and phone and cell towers shall be coordinated with CDFG where located in the High Country SMA and Salt Creek area. The applicant or SCE shall install utility poles, phone, and cell towers in conformance with APLIC standards for collision-reducing techniques as outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).	CDFG	**Measure Implementation**: Construction plans for new or relocated utility poles, etc. shall identify and comply with applicable specifications. **Field Verification:** Field inspect for plan compliance. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-82. a. All surfaces on new antennae and phone/utility towers shall be designed and operated with anti-perching devices in conformance with APLIC standards to deter California condors and other raptors from perching. During construction the area shall be kept clean of debris, such as cable, trash, and construction materials. The applicant shall collect all microtrash and litter (anything shiny, such as broken glass), vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash: what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash. b. The applicant shall retain a qualified biologist with knowledge of California condors to monitor construction activities within the Project area. The resumes of the proposed biologist(s) will be provided to CDFG for concurrence. This biologist(s) will be referred to as the authorized biologist hereafter. During clearing and grubbing of construction areas, the qualified biologist shall be present at all times. During mass grading, construction sites shall be monitored on a daily basis. The authorized	CDFG and USFWS	**Measure Implementation**: Construction plans for new or relocated utility poles, etc. shall identify and comply with applicable specifications. Construction plans and documents will contain notes regarding microtrash and litter control. A qualified biologist approved by CDFG prior to the start of construction activities and shall provide monitoring reports to CDFG and USFWS as necessary. Dead cattle relocation sites shall be approved by CDFG and USFWS prior to the start of construction activities on the Specific Plan site. **Field Verification:** Field inspect for plan compliance as necessary. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Report all condor sightings	

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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 applic ant 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 act ivity 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. c. To further protect California condor potentially foraging in the Project area over the long term from negative interactions with humans and/or artificial structures, the applicant or the JPA or the NLMO shall remove dead cattle that are found or reported within 1,000 feet of a residential or commercial development boundary. Dead cattle shall be relocated to a predetermined location within the High Country SMA or Salt Creek area. The locations where carcasses shall be placed shall be a minimum of 1,000 feet from a development area boundary. Appropriate locations for transfer of carcasses include open grasslands and oak/grassland areas where condors can readily detect carca sses and easily la nd and take off without encountering physical obstacl es such as powerlines and other utility structures. The proposed locations would be selected and approved by the CDFG and USFWS. Pursuant to this measure, a telephone number for reporting dead cattle shall be provided and actively maintained. Any cattle carcasses transferred to the relocation areas shall be reported to the USFWS Condor group.	CDFG and USFWS	to CDFG and USFWS within 24 hours. Report any cattle carcasses transferred to the relocation areas to the USFWS Condor group.	
BIO-83. Thirty days prior to construction activities, a qualified biologist shall conduct a preconstruction survey for ringtail. The survey area shall include suitable riparian and woodland habitat (southern coast live oak riparian forest, southern cottonwood-willow riparian forest, southern willow scrub, coast live oak woodland, valley oak woodland, and mixed oak woodland) within the construction disturbance zone and a 300-foot buffer around the construction site. Should the ringtail be observed in the breeding and rearing period of February 1 through August 31, no construction-related activ ities shall occur within 300 feet of the occupied area for the period of February 1 through August 31 or until the ringtail has been determined by a qualified biologist (in consultation with CDFG) to no longer occupy areas within 300 feet of the	CDFG	**Measure Implementation:** Conduct specified ringtail survey prior to ground-disturbing/construction activities in areas with suitable habitat. **Field Verification:** Qualified biologist to conduct the pre-construction survey for ringtail. **Reporting:** Prepare and submit monitoring report to CDFG within 60 days after completing the ringtail survey.	

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construction zone and/or that construction activities would not adversely affect the successful rearing of young. If the ringtail is observed within the construction disturbance zone or in the 300-foot buffer around the construction site in the nonbreedin g/rearing period of September 1 through January 31, and avoidance is not possible, denning ringtail shall be safely evicted under the direc tion of a qualified biologist (as determined by a Memorandum of Understanding with CDFG). All activities that involve the ringtail shall be documented and reported to CDFG.	CDFG	**Measure Implementation:** Conduct specified ringtail survey prior to ground-disturbing/construction activities in areas with suitable habitat. **Field Verification:** Qualified biologist to conduct the pre-construction survey for ringtail. **Reporting:** Prepare and submit monitoring report to CDFG within 60 days after completing the ringtail survey.	
BIO-84. Bridge and culvert designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area. The final design of the roosting structures would be chosen in consultation with CDFG.	CDFG	**Measure Implementation**: Submit to CDFG for review and approval concurrently with applicable sub-notification letters for individual projects, bat roosting habitat features incorporated into the design of new bridges and culverts. **Plans Approved**: Final design on roosting structures to be chosen in consultation with CDFG. **Field Verification:** Field inspect as necessary. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-85. To preclude the invasion of Argentine ants into the spineflower preserves and their associated buffers, controls will be implemented using an integrated pe st management (IPM) approach in accordance with the approved SCP. The controls include the following. (1) ~~p~~Providing "dry zones" between urban development and spineflower ~~preserves~~ populations~~, including the buffers~~, where typical soil moistures are maintained at levels below about 10% soil saturation, which will deter the establishment of nesting colonies of ants; and providing dry zone buffers of sufficient width to reduce the potential for Argentine ant activity within core habitat areas~~;~~ (2) Where feasible, and/or appropria te, 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 estab lishment of suitable habitat for Argentine ant colonies.	CDFG	**Measure Implementation**: Development plans (i.e., tract maps, grading, construction, drainage and landscape plans) shall incorporate the design requirements of this mitigation measure. **Field Verification:** Field inspect as necessary. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
(4) e~~E~~nsuring that landscape container plants installed within 200 feet of spineflower preserves are ant free prior to installation; ~~—~~, to reduce the chance of colonies establishing in areas close to the preserves. (~~3~~5) M~~m~~aintaining natural hydrological conditions in the spineflower preserves, including the buffers, through project design features; ~~and~~ 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 preserve areas. (6~~4~~) U~~u~~sing drought-resistant plants in FMZs and minimizing irrigation to the extent feasible.	CDFG	**Measure Implementation**: Development plans (i.e., tract maps, grading, construction, drainage and landscape plans) shall incorporate the design requirements of this mitigation measure. **Field Verification:** Field inspect as necessary. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met.	
BIO-86. Requires focused surveys for the unde~~scribed~~ spring snail ~~species~~ (*Pyrgulopsis castaicensis* **n. sp.**) by a qualified biologist prior to the commencement of grading/construction activities in any drainage area supporting perennial flow. Any individuals of the *Pyrgulopsis castaicensis* **n. sp.** ~~undescribed snail species~~ found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If ~~undescribed~~ *Pyrgulopsis castaicensis* **n. sp.** ~~snails~~ are discovered during aquatic and semi-aquatic pre-c onstruction 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 *Pyrgulopsis castaicensis* **n. sp.** ~~snails~~ located, the conditions of the area, and where the species ha s been relocated to, if applicable, shall be submitted to CDFG within 60 days following the relocation.	CDFG	**Measure Implementation:** Conduct specified spring snail surveys prior to ground-disturbing/construction activities in areas with suitable habitat. Required follow-up procedures to be conducted prior to construction activities. **Reporting:** Prepare and submit monitoring report to CDFG within 60 days of any snail relocation.	
BIO-87. Upon initiating landscaping within ~~Following the completion and occupancy of~~ a development area, quarterly monitoring shall be initiated for Argentine ants along the urban-open space interface at sentinel locations where invasions could occur (*e.g.*, where moist microhabitats that attract Argentine ants may be created). A qualified biologist shall determine the monitoring locations. Ant pitfall traps will be placed in these sentinel locations and operated on a quarterly basis to detect invasion by Argentine ants. If Argentine ants are detected during monitoring, direct control measures will be implemented immediately to help prevent the invasion from worsening. These direct controls may include but are not limited to ne st/mound insecticide treatment, or available natural cont rol methods being developed. A general reconnaissance of the infested area w ould also be conducted to identify and correct the possible source of the invasion, such as uncontrolled	CDFG	**Measure Implementation:** Conduct specified Argentine ant monitoring throughout the life of the project, and conduct required follow-up procedures as needed. Contribute to a monitoring endowment prior to tract map recordation. **Field Verification:** Perform quarterly monitoring. **Reporting**: Submit reports annuall y (by April 1) to CDFG, then annually until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
urban runoff, leaking pipes, or collected water. Monitoring and control of Argentine ants would occur for ~~a 50-year period~~ in perpetuity. The Project applicant will fund an endowment, approved by CDFG, for monitoring in perpetuity.			
BIO-88. Any southern California black walnut and mainland cherry trees or shrubs outside riparian areas greater than one inch dbh shall be replaced in the ratio of at least 2:1. Multi-trunk trees/shrub dbh shall be calculated based on combined trunk dbh. Mitigation shall be deemed complete when each replacement tree attains at least one inch in diameter one foot above the base.	CDFG	**Measure Implementation** : Grading plan notes shall include the requirements of this mitigation measure. **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as necessary until restoration/enhancement success criteria are achieved. **Reporting**: Submit reports annually (by April 1) to CDFG, then annually until success criteria are met.	
BIO-89. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 300 feet of construction sites and access roads shall be surveyed at the appropriate season for two-striped garter snake and south coast garter snake. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and September 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. If located, the species will be relocated to suitable pre-approved locations identified in the two-striped garter snake and/or south coast garter snake Relocation Plan. The applicant shall develop a Plan to address the relocation of two-striped garter snake and south coast garter snake. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for each species, identify the locations where more intensive efforts should be conducted, identify the habitat and conditions in the proposed relocation site(s), identify the methods that would be utilized for trapping and relocating the individual species, and provide for the documentation/recordation of the species and number of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities, within potentially occupied habitat. The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of two-striped garter snake and/or south coast garter snake. Clearance surveys for garter	CDFG	**Measure Implementation:** Conduct two-striped garter snake and south coast garter snake surveys prior to the construction of specified structures; prepare relocation plan, and specify survey/monitoring schedule prior to ground disturbing or construction activities. Required follow-up procedures and monitoring to be conducted prior to and throughout construction period. **Field Verification:** Perform four monitoring surveys between April 1 and September 1. **Reporting**: Submit reports annually (by April 1) to CDFG until success criteria are met. Provide adjustments to survey schedule and resumes of biologists provided to CDFG prior to conducting surveys. Submit relocation plan for two-striped garter snake to CDFG. If two-striped garter snake is found, submit plan to CDFG for review and approval.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
snakes shall be conducted within 200 feet of potential habitat by the authorized biologist prior to the initi ation of construction each day. The resume of the proposed biologists will be provided to CDFG for approval prior to conducting the surveys.			
The following mitigation measures were adopted by the County of Los Angeles in conjunction with its approval of the Newhall Ranch Specific Plan EIR. These mitigation measures were identified by the RMDP/SCP EIS/EIR as existing mitigation requirements for project-related impacts to biological resources. **The Department's jurisdiction/regulatory authority encompasses the County's previously adopted biological resource mitigation measures. For that reason, the Department has elected to reproduce in this MMRP the biological resource mitigation measures that were previously adopted by the County, recognizing that the County's adopted MMRP (see Appendix A) covers the monitoring of such measures.** **SP-4.6-1.** The restoration mitigation areas located within the River Corridor SMA shall be in areas that have been disturbed by previous uses or activities. Mitigation shall be conducted only on sites where soils, hydrology, and microclimate conditions ar e suitable for riparian habitat. First priority will be given to those restorable areas that occur adjacent to existing patches (areas) of native habitat that support sensitive species, particularly endangered or threatened species. The goal is to increase habitat patch size and connectivity w ith other existing habitat patches while restoring habitat values that will benefit sensitive species.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-2. A qualified biologist shall prepareor review revegetation plans. The biologist shall also monitor the restoration effort from its inception through the establishment phase.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
SP-4.6-3. Revegetation Plans may be prepared as part of a California Department of Fish and Game 1603 Streambed Alteration Agreement and/or an U.S. Army Corps of Engineers Section 404 Permit, and shall include: ÅInput from both the Project proponent and resource agencies to assure that the Project objectives applicable to the River Corridor SMA and the criteria of this RMP are met. ÅThe identification of restoration/mitigation sites to be used. This effort shall involve an analysis of the suitability of potential sites to support the desired habitat, including a description of the existing conditions at the site(s) and such base line data information deemed necessary by the permitting agency.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-4. The revegetation effort shall involve an analysis of the site conditions such as soils and hydrology so that site preparation needs can be evaluated. The revegetation plan shall include the details and procedures required to prepare the restoration site for planting (i.e., grading, soil preparation, soil stockpiling, soil amendments, etc.), including the need for a supplemental irrigation system, if any.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-5. Restoration of riparian habitats within the River Corridor SMA shall use plant species native to the Santa Clara River. Cuttings or seeds of native plants shall be gathered within the River Corridor SMA or purchased from nurseries with local supplies to provide good genetic stock for the replacement habitats. Plant species used in the restoration of riparian habitat shall be listed on the approved project plant palette (Specific Plan Table 2.6-1, Recommended Plant Species for Habitat Restoration in the River Corridor SMA) or as approved by the permitting State and Federal agencies.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-6. The final revegetation plans shall include notes that outline the methods and procedures for the installation of the plant materials. Plant protection measures identified by the project biologist shall be incorporated into the planting design/layout.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
SP-4.6-7. The revegetation plan shall include guidelines for the maintenance of the mitigation site during the establishment phase of the plantings. The maintenance program shall contain guidelines for the control of non-native plant species, the maintenance of the irrigation system, and the replacement of plant species.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-8. The revegetation plan shall provide for monitoring to evaluate the growth of the developing habitat. Specific performance goals for the restored habitat shall be defined by qualitative and quantitative characteristics of similar habitats on the River (e.g., density, cover, species composition, structural development). The monitoring effort shall include an evaluation of not only the plant material installed, but the use of the site by wildlife. The length of the monitoring period shall be determined by the permitting state and/or federal agency.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-9. Monitoring reports for the mitigation site shall be reviewed by the permitting State and/or Federal agency.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-10. Contingency plans and appropriate remedial measures shall also be outlined in the revegetation plan.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-11. Habitat enhancement as referred to in this document means the rehabilitation of areas of native habitat that have been moderately disturbed by past activities (e.g., grazing, roads, oil and natural gas operations, etc.) or have been invaded by non-native plant species such as	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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giant cane (*Arundo donax*) and tamarisk (*Tamarix* sp.). measure monitoring	requirements (Appendix A).		
SP-4.6-12. Removal of grazing is an im portant means of enhancement of habitat values. Without o ngoing disturbance from cattle, many riparian areas will recover naturally. Grazing except as permitted as a long-term resource management activity will be removed from the River Corridor SMA pursuant to the Long-Term Management Plan set forth in Section 4.6 of the Specific Plan EIR.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-13. To provide guidelines for the installation of supplemental plantings of native species within enhancement areas, a revegetation plan shall be prepared prior to implementation of mitigation (see guidelines for revegetation plans above). Th ese supplemental pl antings will be composed of plant species similar to those growing in the existing habitat patch (see Specific Plan Table 2.6-1).	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-14. Not all enhancement areas will necessarily require supplemental plantings of native species. Some areas may support conditions conducive for rapid "nat ural" re-establishment of native species. The revegetation plan may incorporate means of enhancement to areas of compacted soils, poor soil fertility, trash or flood debris, and roads as a way of enhancing riparian habitat values.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-15. Removal of non-native speci es such as giant cane (*Arundo donax*), salt cedar or tamarisk (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), castor bean (*Ricans communis*), if included in a revegetation plan to mitigate impacts, shall be subject to the following standards: ÅFirst priority shall be given to those habitat patches that support or have a high potential for supporting sensitive species, particularly endangered or threatened species.	County and CDFG s	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Perform quarterly monitoring until success criteria are met. **Reporting**: Submit reports to County and CDFG annually	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
ÅAll non-native species removals sh all be conducted according to a resource agency approved exotics removal program. ÅRemoval of non-native species in pa tches of native habitat shall be conducted in such a way as to minimize impacts to the existing native riparian plant species.		(by April 1) until success criteria are met.	
SP-4.6-16. Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources shall be conduc ted pursuant to the Oak Resources Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to C ounty, CDFG, and Corps annually (by April 1) until success criteria are met.	
SP-4.6-17. Access to the River Corridor SMA for hiking and biking shall be limited to the River trail system (including the Regional River Trail and various Local Trails) as set forth in this Specific Plan. ÅThe River trail system shall be designed to avoid impacts to existing native riparian habitat, especia lly habitat areas known to support sensitive species. Where impacts to riparian habitat are unavoidable, disturbance shall be minimized and mitigated as outlined above under **Mitigation Measures 4.6-1** through **4.6-8**. ÅAccess to the River Corridor SMA will be limited to day time use of the designated trail system. ÅSigns indicating that no pets of any kind will be allowed within the River Corridor SMA, with the exce ption that equestrian use is permitted on established trails, shall be posted along the River Corridor SMA. ÅNo hunting, fishing, or motor or off-trail bike riding shall be permitted. ÅThe trail system shall be desi gned and constructed to minimize impacts on native habitats.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification**: Signs to be maintained in perpetuity. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-18. Where development lies adjacent to the boundary of the River Corridor SMA a transition area shall be designed to lessen the impact of the development on the c onserved area. Transition areas may be comprised of Open Area, natural or revegetated manufactured slopes,	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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other planted areas, bank areas, and trails. Exhibits 2.6-4, 2.6-5, and 2.6-6 indicate the relationship between the River Corridor SMA and the development (disturbed) areas of the Specific Plan. The SMAs and the Open Area as well as the undisturbed portions of the development areas are shown in green. As indicated on the exhibits, on the south side of the River the River Corridor SMA is separated from development by the River bluffs, except in one location. The Regional River Trail will serve as transition area on the north side of the River where development areas adjoin the River Corridor SMA (excluding Travel Village).		**Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-19. The following are the standards for design of transition areas: ÅIn all locations where there is no steep grade separation between the River Corridor and development, a trail shall be provided along this edge. ÅNative riparian plants shall be incorporated into the landscaping of the transition areas between the River Corridor SMA and adjacent development areas where feasible for their long-term survival. Plants used in these areas shall be those listed on the approved plant palette (Specific Plan Table 2.6-2 of the Resource Management Plan [Recommended Plants for Transition Areas Adjacent to the River Corridor SMA]). ÅRoads and bridges that cross the River Corridor SMA shall have adequate barriers at their perimeters to discourage access to the River Corridor SMA adjacent to the structures. ÅWhere bank stabilization is required to protect development areas, it shall be composed of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other locations where public health and safety requirements necessitate concrete or other bank protection. ÅA minimum 100 foot wide buffer adjacent to the Santa Clara River should be required between the top river-side of bank stabilization and development within the Land Use Designations Residential Low Medium, Residential Medium, Mixed-Use and Business Park unless, through Planning Director review in consultation with the staff biologist, it is determined that a lesser buffer would adequately protect the riparian resources within the River Corridor or that a 100 foot wide buffer is infeasible for physical infrastructure planning. The buffer area may be used for public infrastructure, such as: flood control access; sewer, water and utility easements; abutments; trails	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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and parks, subject to findings of consistency with the Specific Plan and applicable County policies.			
SP-4.6-20. The following guidelines shall be followed during any grading activities that take place within the River Corridor SMA: ÅGrading perimeters shall be clearly marked and inspected by the project biologist prior to grading occurring within or immediately adjacent to the River Corridor SMA. ÅThe project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-21. Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area desi gnation for the River Corridor SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3 of the Specific Plan.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-22. Upon completion of development of all land uses, utilities, roads, flood control improvements , bridges, trails, and other improvements necessary for implementation of the Specific Plan within the River Corridor in each subdivision allowing construction within or adjacent to the River Corridor, a permanent, non-revocable *conservation and public access easement* shall be offered to the County of Los Angeles pursuant to **Mitigation Measure 4.6-23** below over the portion of the River Corridor SMA within that subdivision.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Upon completion of development, submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-23. The River Corridor SMA *Conservation and Public Access Easement* shall be offered to the County of Los Angeles prior to the transfer of the River Corridor SMA ownership, or portion thereof to the management entity described in **Mitigation Measure 4.6-26** below.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-24. The River Corridor SMA *Conservation and Public Access Easement* shall prohibit grazing, excep t as a long-term resource management activity, and agriculture within the River Corridor and shall	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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restrict recreation use to the established trail system. Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended in the event of the filing of any legal action against Los Angeles County challenging final approval of the Newhall Ranch Specific Plan and any related project approvals or certification of the Final EIR for Newhall Ranch. Agricultural land us es and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended by the time period between the filing of any such legal action and the entry of a final judgment by a court with appropriate jurisdiction, after exhausting all rights of appeal, or execution of a final settlement agreement between all parties to the legal action, whichever occurs first.		**Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-25. The River Corridor SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-26. Prior to the recordation of the River Corridor SMA *Conservation and Public Access Easement* as specified in **Mitigation Measure 4.6-23** above, the land owner shall provide a plan to the County for the permanent ownership and management of the River Corridor SMA, including any necessary financi ng. This plan shall include the transfer of ownership of the River Corridor SMA to the Center for Natural Lands Management, or if the Center for Natural Lands Management is declared bankrupt or dissolved, ownership will transfer or revert to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting:** Submit permanent ownership and management plan to County and CDFG	
SP-4.6-26a. Two types of habitat restoration may occur in the High Country SMA: 1) riparian revegetation activities principally in Salt Creek Canyon; and 2) oak tree replacement in, or adjacent to, existing oak woodlands and savannahs. ÅMitigation requirements for riparian revegetation activities within	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

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the High Country SMA are the same as those for the River Corridor SMA and are set forth in **Mitigation Measures 4.6-1** through **4.6-11** and **4.6-13** through **4.6-16** above. ÅMitigation requirements for oak tree replacement are set forth in **Mitigation Measure 4.6-48** below.			
SP-4.6-27. Removal of grazing from the High Country SMA except for those grazing activities associ ated with long-term resource management programs, is a principal means of enhancing habitat values in the creeks, brushland and woodla nd areas of the SMA. The removal of grazing in the High Country SMA is discussed below under (b) 4. Long Term Management. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions as set forth for enhancement in the River Corridor SMA. Specific Plan Table 2.6-3 of the Resource Management Plan provides a list of appropriate plant species for use in enhancement areas in the High Country SMA.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting:** Submit enhancement plan for riparian habitat to County and CDFG annually until success criteria are met.	
SP-4.6-28. Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources, shall be conducted pursuant to the Oak Resource Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	County, CDFG, and County Forester	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting:** Submit reports to County and CDFG annually (by April 1) until success criteria are met. Mitigation banking plans to CDFG and County Forester.	
SP-4.6-29. Access to the High Country SMA will be limited to day time use of the designated trail system.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-30. No pets of any kind will be allowed within the High Country SMA, with the exception that equestrian use is permitted on established trails.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-31. No hunting, fishing, or motor or trail bike riding shall be permitted.	Refer to the Newhall Ranch Specific Plan MMRP for previously	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring	

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	adopted mitigation measure monitoring requirements (Appendix A).	requirements (Appendix A).	
SP-4.6-32. The trail system shall be designed and constructed to minimize impacts on native habitats.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-33. Construction of buildings and other structures (such as patios, decks, etc.) shall only be permitted upon developed pads within Planning Areas OV-04, OV-10, PV-02, and PV-28 and shall not be permitted on southerly slopes faci ng the High Country SMA (Planning Area HC-01) or in the area between the original SEA 20 boundary and the High Country boundary. If disturbed by grading, all southerly facing slopes which adjoin the High Country SMA within those Planning Areas shall have the disturbed areas revegetated with compatible trees, shrubs and herbs from the list of plant species for south and west facing slopes as shown in Table 2.6-3, Recommended Plant Species For Use In Enhancement Areas In The High Country. Transition from the development edge to the natural area shall also be controlled by the standards of wild fire fuel modification zones as set forth in **Mitigation Measure 4.6-49** . Within fuel modification areas, trees and herbs from Table 2.6-3 of the Resource Management Plan should be planted toward the top of slopes; and trees at lesser densities and shrubs planted on lower slopes.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-34. Grading perimeters shall be clearly marked and inspected by the project biologist prior to impacts occurring within or adjacent to the High Country SMA.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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SP-4.6-35. The project biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-36. Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the High Country SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-37. The High Country SMA shall be offered for dedication in three approximately equal phases of approximately 1,400 acres each proceeding from north to south, as follows: (1) The first offer of dedication will take place with the issuance of the 2,000th residential building permit of Newhall Ranch; (2) The second offer of dedication will take place with the issuance of the 6,000th residential building permit of Newhall Ranch; and (3) The remaining offer of dedication will be completed by the 11,000th residential building permit of Newhall Ranch. (4) The Specific Plan applicant shall provide a quarterly report to the Departments of Public Works and Regional Planning which indicates the number of residential building permits issued in the Specific Plan area by subdivision map number.	CDFG and Departments of Public Works and Regional Planning	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting:** Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit quarterly reports to CDFG, the Department of Public Works and Regional Planning.	
SP-4.6-38. Prior to dedication of the High Country SMA, a *conservation and public access easement* shall be offered to the County of Los Angeles and a conservation and management easement offered to the Center for Natural Lands Management. The High Country SMA *Conservation and Public Access Easement* shall be consistent in its provisions with any other *conservation easements* to State or Federal	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

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resource agencies which may have been granted as part of mitigation or mitigation banking activities.			
SP-4.6-39. The High Country SMA conservation and public access easement shall prohibit grazing within the High Country, except for those grazing activities associated with the long-term resource management programs, and shall restrict recreation to the established trail system.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-40. The High Country SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-41. The High Country SMA shall be offered for dedication in fee to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members). The *joint powers authority* will have overall responsibility for recreation within and conservation of the High Country.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-42. An appropriate type of servic e or assessment district shall be formed under the authority of the Los Angeles County Board of Supervisors for the collection of up to $24 per single family detached dwelling unit per year and $15 per si ngle family attached dwelling unit per year, excluding any units designated as Low and Very Low affordable housing units pursuant to Section 3.10, Affordable Housing Program of the Specific Plan. This revenue would be assessed to the homeowner beginning with the occupancy of each dwelling unit and distributed to the *joint powers authority* for the purposes of recreation, maintenance, construction, conservation and related activities within the *High Country Special Management Area*.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

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SP-4.6-43. Suitable portions of *Open Area* may be used for mitigation of riparian, *oak resources* , or elderberry scrub. Mitigation activities within *Open Area* shall be subject to the following requirements, as applicable. Å River Corridor SMA Mitigation Requirements, including: **Mitigation Measures 4.6-1** through **4.6-11** and **4.6-13** through **4.6-16**; and Å High Country SMA Mitigation Requirements, including: **Mitigation Measures 4.6-27**, **4.6-29** through **4.6-42**, and ÅMitigation Banking **- Mitigation Measure 4.6-16**.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-44. Drainages with flows greater than 2,000 cfs will have soft bottoms. Bank protection will be of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-45. The precise alignments nad widths of major drainages will be established through the preparation of drainage studies to be approved by the County at the time of subdivision maps which permit construction.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-46. While Open Area is generally intended to remain in a natural state, some grading may take place, especially for parks, major drainages, trails, and roadways. Trails are also planned to be within Open Area.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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SP-4.6-47. At the time that final subdivision maps permitting construction are recorded, the *Open Area* within the map will be offered for dedication to the Center for Natural Lands Management. Community Parks within *Open Area* are intended to be public parks. Prior to the offer of dedication of *Open Area* to the Center for Natural Lands Management, all necessary *conservation and public access easements*, as well as easements for infrastructure shall be offered to the County.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-47a. Mitigation Banking will be permitted within the River Corridor SMA, the High Country SMA, and the *Open Area land use designations*, subject to the following requirements: ÅMitigation banking activities for riparian habitats will be subject to State and Federal regulations, and shall be conducted pursuant to the mitigation requirements set forth in **Mitigation Measure 4.6-1** through **4.6-15** above. ÅMitigation banking for oak resources shall be conducted pursuant to **4.6-48** below. ÅMitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-48. Standards for the restoration and enhancement of oak resources within the High Country SMA and the Open Area include the following (oak resources include oak trees of the sizes regulated under the County Oak Tree Ordinance, southern California black walnut trees, Mainland cherry trees, and Mainland cherry shrubs): ÅTo mitigate the impacts to oak resources which may be removed as development occurs in the Specific Plan Area, replacement trees shall be planted in conformance with the oak tree ordinance in effect at that time. ÅOak resource species obtained from the local gene pool shall be used in restoration or enhancement. ÅPrior to recordation of construction-level final subdivision maps, an oak resource replacement plan shall be prepared that provides the guidelines for the oak tree planting and/or replanting. The Plan shall be reviewed by the Los Angeles Department of Regional Planning and the County Forester and shall include the following: site selection and preparation, selection of proper species including sizes and planting densities, protection from herbivores, site maintenance,	CDFG. County Forester, and Department of Regional Planning	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit oak resource management plan to Department of Regional Planning and County Forester prior to recordation of final subdivision maps.	

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performance standards, remedial actions, and a monitoring program. ÅAll plans and specifications shall follow County oak tree guidelines, as specified in the County Oak Tree Ordinance.			
SP-4.6-49. To minimize the potential exposure of the development areas, Open Area, and the SMAs to fire hazards, the Specific Plan is subject to the requirements of the Los Angeles County Fire Protection District (LACFPD), which provides fire protection for the area. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMA, a wildfire fuel modification plan shall be prepared in accordance with the fuel modification ordinance standards in effect at that time and shall be submitted for approval to the County Fire Department.	CDFG and County Fire Department	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit wildfire fuel modification plan to the County Fire Department for approval.	
SP-4.6-50. The wildfire fuel modification plan shall depict a fuel modification zone the size of which shall be consistent with the County fuel modification ordinance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-51. In order to enhance the habitat value of plant communities which require fuel modification, fire retardant plant species containing habitat value may be planted within the fuel modification zone. Typical plant species suitable for Fuel Modification Zones are indicated in Specific Plan Table 2. 6-5 of the Resource Management Plan. Fuel modification zones adjacent to SMAs and Open Areas containing habitat of high value such as oak woodland and savannas shall utilize a more restrictive plant list which shall be reviewed by the County Forester.	CDFG and County Forester	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Restrictive plant list to be reviewed by County Forester.	
SP-4.6-52. The wildfire fuel modification plan shall include the following construction period requirements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to the County Fire Department requirements.	CDFG and County Fire Department	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit wildfire fuel modification plan to CDFG and County Fire Department.	
SP-4.6-53. If, at the time any subdivision map proposing construction is submitted, the County determines through an Initial Study, or	County and CDFG	**Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit reports	

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otherwise, that there may be rare, threatened or endangered, plant or animal species on the property to be subdivided, then, in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, current, updated site-specific surveys for all such animal or plant species shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 within those areas of the Specific Plan where such animal or plant species occur or are likely to occur. The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other rare, sensitive, threatened, or endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted during appropriate seasons by qualified botanists or qualified wildlife biologists in a manner that will locate any rare, sensitive, threatened, or endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the United States Fish and Wildlife Service or the California Department of Fish and Game, all such protocols shall be followed in preparing the updated site-specific surveys. All site-specific survey work shall be documented in a separate report containing at least the following information: (a) project description, including a detailed map of the project location and study area; (b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; (c) detailed description of survey methodologies; (d) dates of field surveys and total person-hours spent on the field surveys; (e) results of field surveys, including detailed maps and location data; (f) an assessment of potential impacts; (g) discussion of the significance of the rare, threatened or endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; (h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (*Guidelines* §15370); (i) references cited and persons contacted; and (j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts."		to County and CDFG when it's newly determined there are threatened or endangered plant or animal species.	

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SP-4.6-54. Prior to development within or disturbance to occupied Unarmored threespine stickleback habitat, a formal consultation with the USFWS shall occur.	County, CDFG, and USFWS	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Consult with USFWS with CDFG notification.	
SP-4.6-55. Prior to development or dist urbance within wetlands or other sensitive habitats, permits shall be obtained from pertinent Federal and State agencies and the Specific Plan shall conform with the specific provisions of said permits. Performance criteria shall include that described in **Mitigation Measures 4.6-1** through **4.6-16** and **4.6-42** through **4.6-47** for wetlands, and **Mitigation Measures 4.6-27**, **4.6-28**, and **4.6-42** through **4.6-48** for other sensitive habitats.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-56. All lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	
SP-4.6-57. Where bridge construction is proposed and water flow would be diverted, blocking nets and se ines shall be used to control and remove fish from the area of activity. All fish captured during this operation would be stored in tubs and returned unharmed back to the River after construction activities were complete.	County, CDFG, and USFWS	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County, CDFG, and USFWS annually (by April 1) until success criteria are met.	
SP-4.6-58. To limit impacts to water quality the Specific Plan shall conform with all provisions of required NPDES permits and water quality permits that would be required by the State of California Regional Water Quality Control Board.	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

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SP-4.6-59. Consultation shall occur with the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones: (1) Before Surveys. Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used. (2) After Surveys. After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work. (3) Subdivision Map Submittal. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County. (4) Development/Disturbance and Further Mitigation. Prior to any development within, or disturbance to, habitat occupied by rare, threatened, or endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both USFWS and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on endangered, rare or threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification**: Conduct formal consultation with the County of Los Angeles before surveys; after surveys; at subdivision map submittal; and at development/ disturbance, and other mitigation. **Reporting**: Submit reports to County and CDFG before surveys. Submit reports to County and CDFG after surveys. Submit reports to County and CDFG within 30 days of subdivision map submittal. Submit reports to County and CDFG, and other relevant entities when permits newly obtained require revisions to Specific Plan.	
SP-4.6-60. If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring	

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be elderberry scrub vegetation on th e property being subdivided, then a site specific survey shall be conducte d to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.		requirements (Appendix A). **Reporting**: Submit report to County and CDFG when it's determined elderberry scrub may be on the property.	
SP-4.6-61. If at the time subdivisions permitting construction are processed, the County determines through and Initial Study that there may be mainland cherry trees and/or mainland cherry shrubs on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit report to County and CDFG when it's determined mainland cherry shrubs may be on the property.	
SP-4.6-62. When a map revision or Substantial Conformance determination on any subdivision map or Conditional Use Permit would result in changes to an approved oak tree permit, then the oak tree report for that oak tree permit must be amended for the area of change, and the addendum must be approved by the County Forester prior to issuance of grading permits for the area of the map or CUP being changed.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit report to Count y, CDFG, and County Forester when map revision results in changes to an approved oak tree permit.	
SP-4.6-63. Riparian resources that are impacted by buildout of the Newhall Ranch Specific Plan shall be restored with similar habitat at the rate of one acre replaced for each acre lost.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-64. The operator of the golf course shall prepare a Golf Course Maintenance Plan which shall include procedures to control storm water quality and ground water quality as a result of golf course maintenance practices, including irrigation, fertilizer, pesticide and herbicide use. This Plan shall be prepared in coordination with the County biologist and approved by the County Planning Director prior to the issuance of a Certificate of Occupancy.	CDFG, County Biologist, and County Planning Director	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit golf course maintenance plan to County Biologist and County Planning Director.	
SP-4.6-65. In order to facilitate the conservation of the spineflower on the Newhall Ranch Specific Plan site, the applicant, or its designee, shall, concurrent with Specific Plan approval, agree to the identified special study areas shown below in **Figure 2.6-8, Spineflower Mitigation Area Overlay**. The applicant, or its desi gnee, further acknowledges that, within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**), changes will likely occur to Specific Plan development footprints,	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

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roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level. The applicant, or its designee, shall design subdivision maps that are responsive to the characteristics of the spineflower and all other endangered plant species that may be found on the Specific Plan site.			
SP-4.6-66. Direct impacts to known spineflower populations within the Newhall Ranch Specific Plan area shall be avoided or minimized through the establishment of one or more on-site preserves that are configured to ensure the continued existence of the species in perpetuity. Preserve(s) shall be delineated in consultation with the County and CDFG, and will likely require changes and revisions to Specific Plan development footprints for lands within and around the Spineflower Mitigation Area Overlay (**Figure 2.6-8**). Delineation of the boundaries of Newhall Ranch spineflower preserve(s) for the entire Specific Plan area shall be completed in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesas Village, or that portion of Riverwood Village in which the San Martinez spineflower population occurs. A sufficient number of known spineflower populations shall be included within the Newhall Ranch spineflower preserve(s) in order to ensure the continued existence of the species in perpetuity. The conservation of known spineflower populations shall be established in consultation with the County and CDFG, and as consistent with standards governing issuance of an incidental take permit for spineflower pursuant to Fish and Game Code section 2081, subdivision (b). In addition to conservation of known populations, spineflower shall be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s). The creation of introduced populations shall require seed collection and/or top soil at impacted spineflower locations and nursery propagation to increase seed and sowing of seed. The seed collection activities, and the maintenance of the bulk seed repository, shall be approved in advance by the County and CDFG. Once the boundaries of the Newhall Ranch spineflower preserve(s) are delineated, the project applicant, or its designee, shall be responsible for conducting a spineflower population census within the Newhall Ranch spineflower preserve(s) annually for 10 years. (These census surveys shall be in addition to the surveys required by **Mitigation Measure 4.6-53**, above.) The yearly spineflower population census documentation	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Consult with County and CDFG to delineate preserves. Have seed collection activities approved in advance by County and CDFG. **Reporting**: Submit all reports to CDFG in perpetuity. Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit yearly spineflower population census documentation submitted to County and CDFG (by April 1) for 10 years (and up to an additional 5 years). Submit annual viability reports to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s).	

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shall be submitted to the County and CDFG, and maintained by the project applicant, or its designee. If there are any persistent population declines documented in the annual population census reports, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. In no event, however, shall project-related activities jeopardize the continued existence of the Newhall Ranch spineflower populations. If a persistent population decline is documented, such as a trend in steady population decline that persists for a period of 5 consecutive years, or a substantial drop in population is detected over a 10-year period, spineflower may be introduced in consultation with CDFG in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. These activities shall be undertaken by a qualified botanist/biologist, subject to approval by the County and CDFG. The project applicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, including monitoring, as approved by the County and CDFG. Annual viability reports shall be submitted to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s) to ensure long-term documentation of the spineflower population status within the Newhall Ranch preserve(s). In the event annual status reports indicate the spineflower population within the Newhall Ranch preserve(s) is not stable and viable 10 years following delineation of the spineflower preserve(s), the project applicant, or its designee, shall continue to submit annual status reports to the County and CDFG for a period of no less than an additional 5 years.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Consult with County and CDFG to delineate preserves. Have seed collection activities approved in advance by County and CDFG. **Reporting**: Submit all reports to CDFG in perpetuity. Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit yearly spineflower population census documentation submitted to County and CDFG (by April 1) for 10 years (and up to an additional 5 years). Submit annual viability reports to the County and CDFG for 10 years following delineation of the Newhall Ranch spineflower preserve(s).	
SP-4.6-67. Indirect impacts associated with the interface between the preserved spineflower populations and planned development within the Newhall Ranch Specific Plan shall be avoided or minimized by establishing open space connections with Open Area, River Corridor, or High Country land use designations. In addition, buffers (i.e., setbacks from developed, landscaped or other use areas) shall be established around portions of the delineated preserve(s) not connected to Open Area, the River Corridor or the High Country land use designations. The open space connections and buffer configurations shall take into account local hydrology, soils, existing and proposed adjacent land uses, the presence of non-native invasive plant species, and seed dispersal vectors.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit revegetation area monitoring reports to County and CDFG annually (by April 1) until success criteria are met. Submit revegetation seed mix to County and CDFG.	

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Open space connections shall be configured such that the spineflower preserves are connected to Open Area, River Corridor, or High Country land use designations to the extent practicable. Open space connections shall be of adequate size and configuration to achieve a moderate to high likelihood of effectiveness in avoidi ng or minimizing indirect impacts (e.g., invasive plants, increased fire frequency, trampling, chemicals, etc.) to the spineflower preserve(s). Open space connections for the spineflower preserve(s) shall be configured in consultation with the County and CDFG. Open space connections for the spineflower preserve(s) shall be established for the entire Specific Plan area in conjunction with approval of the fi rst Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the San Martinez spineflower location occurs. For preserves and/or those portions of preserves not connected to Open Area, River Corridor, or High Count ry land use designations, buffers shall be established at variable distances of between 80 and 200 feet from the edge of development to achieve a moderate to high likelihood of effectiveness in avoiding or minimizi ng indirect impacts (e.g., invasive plants, increased fire frequency, trampling, chemicals, etc.) to the spineflower preserve(s). The buffer size/configuration shall be guided by the analysis set forth in the "*Review of Potential Edge Effects on the San Fernando Valley Spineflower* ," prepared by Conservation Biology Institute, January 19, 2000, and other sources of scientific information and analysis, which are available at the time the preserve(s) and buffers are established. Buffers for the spineflower preserve(s) shall be configured in consultation with the County and CDFG for the entire Specific Plan area. Buffers for the spineflower preserve(s) shall be established in conjunction with approval of the first Newhall Ranch subdivision map filed in either the Mesa Village, or that portion of the Riverwood Village in which the Sa n Martinez spineflower location occurs. Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranc h subdivision map(s) process. No other development or disturbance of native habitat shall be allowed within the spineflower preserve(s) or buffer(s). The project applicant, or its de signee, shall be responsible for revegetating open space connections and buffer areas of the Newhall	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit revegetation area monitoring reports to County and CDFG annually (by April 1) until success criteria are met. Submit reve getation seed mix to County and CDFG.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Ranch spineflower preserve(s) to mitigate temporary impacts due to grading that will occur within por tions of those open space connections and buffer areas. The impacted areas shall be reseeded with a native seed mix to prevent erosion, reduce the potential for invasive non-native plants, and maintain functioning hab itat areas within the buffer area. Revegetation seed mix shall be re viewed and approved by the County and CDFG.			
SP-4.6-68. To protect the preserved Newhall Ranch spineflower populations, and to further reduce potential direct impacts to such populations due to unrestricted access, the project applicant, or its designee, shall erect and maintain temporary orange fencing and prohibitive signage around the Newha ll Ranch preserve(s), open space connections and buffer areas, which are adjacent to areas impacted by proposed development prior to and during all phases of construction. The areas behind the temporary fenci ng shall not be used for the storage of any equipment, materials, construc tion debris or anything associated with construction activities. Following the final phase of cons truction of any Newhall Ranch subdivision map adjacent to the Newhall Ranch spineflower preserve(s), the project applicant, or its designee, shall install and maintain permanent fencing along the subdivision tract bordering the preserve(s). Permanent signage shall be installed on the fe ncing along the preservation boundary to indicate that the fenced area is a biological preserve, which contains protected species and habitat, that access is restricted, and that trespassing and fuel modification are prohibited within the area. The permanent fencing shall be designed to allow wildlife movement. The plans and specifications for the permanent fencing and signage shall be approved by the County and CDFG prior to the final phase of construction of any Newhall Ranc h subdivision map adjacent to a Newhall Ranch spineflower preserve(s).	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit signage to County and CDFG for approval.	
SP-4.6-69. Indirect impacts resulting from changes to hydrology (i.e., increased water runoff from surrounding development) at the interface between spineflower preserve(s) a nd planned development within the Newhall Ranch Specific Plan shall be avoided or mitigated to below a level of significance. Achievement of this standard will be met through the documented demonstration by the project applican t, or its designee, that the storm drain system achieves pre-development hydrological conditions for the	County, CDFG, and County Planning Director	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: To County and CDFG annually (by April 1) until success criteria are met. Submit storm drain study to Planning Director, CDFG and the County.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Newhall Ranch spineflower preserve(s). To document such a condition, the project applicant, or its designee, shall prepare a study of the pre- and post-development hydrology, in conjunction with Newhall Ranch subdivision maps adjacent to spineflower preserve(s). The study shall be used in the design and engineering of a storm drain system that achieves pre-development hydrological conditions. The study must conclude that proposed grade changes in development areas beyond the buffers will maintain pre-development hydrology conditions within the preserve(s). The study shall be approved by the Planning Director of the County, and the resulting conditions confirmed by CDFG. The storm drain system for Newhall Ranch subdivision maps adjacent to any spineflower preserves must be approved by the County prior to the initiation of any grading activities.	County, CDFG, and County Planning Director	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: To County and CDFG annually (by April 1) until success criteria are met. Submit storm drain study to Planning Director, CDFG and the County.	
SP-4.6-70. Consistent with the Spineflower Mitigation Area Overlay reflected in **Mitigation Measure 4.6-65**, direct impacts to known Newhall Ranch spineflower populations associated with proposed road construction or modifications to existing roadways shall be further assessed for proposed road construction at the Newhall Ranch subdivision map level, in conjunction with the tiered EIR required for each subdivision map. To avoid or substantially lessen direct impacts to known spineflower populations, Specific Plan roadways shall be redesigned or realigned, to the extent practicable, to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in **Mitigation Measures 4.6-66 and 4.6-67**. The project applicant, or its designee, acknowledges that that road redesign and re-alignment is a feasible means to avoid or substantially lessen potentially significant impacts on the now known Newhall Ranch spineflower populations. Road redesign or alignments to be considered at the subdivision map level include: (a) Commerce Center Drive; (b) Magic Mountain Parkway; (c) Chiquito Canyon Road; (d) Long Canyon Road; (e) San Martinez Grande Road; (f) Potrero Valley Road;	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
(g) Valencia Boulevard; and (h) Any other or additional roadways that have the potential to significantly impact known Newhall Ranch spineflower populations. Roadways and road rights-of-way shall not be constructed in any spineflower preserve(s) and buffer locations on Newhall Ranch, unless constructing the road(s) in such location is found to be the environmentally superior alternative in subsequently required tiered EIRs in connection with the Newhall Ranch subdivision map(s) process.			
SP-4.6-71. Consistent with the Spineflower Mitigation Area Overlay reflected in **Mitigation Measure 4.6-65**, direct impacts to known Newhall Ranch spineflower populations shall be further assessed at the Newhall Ranch subdivision map level, in conjunction with the required tiered EIR process. To avoid or substantially lessen impacts to known spineflower populations at the subdivision map level, the project applicant, or its designee, may be required to adjust Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading to achieve the spineflower preserve and connectivity/preserve design/buffer standards set forth in **Mitigation Measures 4.6-66 and 4.6-67** for all future Newhall Ranch subdivision maps that encompass identified spineflower populations.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-72. A Fire Management Plan shall be developed to avoid and minimize direct and indirect impacts to the spineflower, in accordance with the adopted Newhall Ranch Resource Management Plan (RMP), to protect and manage the Newhall Ranch spineflower preserve(s) and buffers. The Fire Management Plan shall be completed by the project applicant, or its designee, in conjunction with approval of any Newhall Ranch subdivision map adjacent to a spineflower preserve. The final Fire Management Plan shall be approved by the County of Los Angeles Fire Department through the processing of subdivision maps. Under the final Fire Management Plan, limited fuel modification activities within the spineflower preserves will be restricted to selective thinning with hand tools to allow the maximum preservation of Newhall Ranch spineflower populations. No other fuel modification or clearance activities shall be allowed in the Newhall Ranch spineflower preserve(s).	CDFG and Los Angeles County Fire Department	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit fire management plan to County Fire Department and CDFG. Submit burn plan to County Fire Department and CDFG.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Controlled burning may be allowed in the future within the Newhall Ranch preserve(s) and buffers, provided that it is based upon a burn plan approved by the County of Los Ange les Fire Department and CDFG. The project applicant, or its designee, shall also be responsible for annual maintenance of fuel modification z ones, including, but not limited to, removal of undesirable non-native pl ants, revegetation with acceptable locally indigenous plants and clea ring of trash and other debris in accordance with the County of Los Angeles Fire Department.			
SP-4.6-73. At the subdivision map level, the project applicant, or its designee, shall design and implement project-specific design measures to minimize changes in surface water flows to the Newhall Ranch spineflower preserve(s) for all Newhall Ranch subdivision maps adjacent to the preserve(s) and buffers, and avoid and minimize indirect impacts to the spineflower. Prior to issuance of a grading permit for each such subdivision map, the project applicant, or its designee, shall submit for approval to the County plans a nd specifications that ensure implementation of the following design measures: (a) During construction activities, drainage ditches, piping or other approaches will be put in place to convey excess storm water and other surface water flows aw ay from the Newhall Ranch spineflower preserve(s) and conn ectivity/preserve design/buffers, identified in **Mitigation Measures 4.6-66** and **4.6-67**; (b) Final grading and drainage desi gn will be developed that does not change the current surface and subsurface hydrological conditions within the preserve(s); (c) French drains will be installed along the edge of any roadways and fill slopes that drain toward the preserve(s); (d) Roadways will be constructed with slopes that convey water flows within the roadway easements and away from the preserve(s); (e) Where manufactured slopes drain toward the preserve(s), a temporary irrigation system would be installed to the satisfaction of the County in order to establish the vegetation on the slope area(s). This system shall continue only until the slope vegetation is established and self-sustaining; (f) Underground utilities will not be located within or through the preserve(s). Drainage pipes installed within the preserve(s) away from spineflower populations to convey surface or subsurface	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
water away from the populations will be aligned to avoid the preserve(s) to the maximum extent practicable; and (g) Fencing or other structural type barriers that will be installed to reduce intrusion of people or domestic animals into the preserve(s) shall incorporate footing designs that minimize moisture collection.			
SP-4.6-74. A knowledgeable, experienced botanist/biologist, subject to approval by the County and CDFG, shall be required to monitor the grading and fence/utility installation activities that involve earth movement adjacent to the Newhall Ranch spineflower preserve(s) to avoid the incidental take through direct impacts of conserved plant species, and to avoid disturbance of the preserve(s). The biological monitor will conduct bi-weekly inspections of the project site during such grading activities to ensure that the mitigation measures provided in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section) are implemented and adhered to. Monthly monitoring reports, as needed, shall be submitted to the County verifying compliance with the mitigation measures specified in the adopted Newhall Ranch Mitigation Monitoring Program (Biota section). The biological monitor will have authority to immediately stop any such grading activity that is not in compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section), and to take reasonable steps to avoid the take of, and minimize the disturbance to, spineflower populations within the preserve(s).	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification**: Botanist/biologist to be approved by County and CDFG. Perform bi-weekly monitoring, monthly monitoring, and monitoring whenever activity involves movement of earth adjacent to spineflower preserves. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit monitoring reports to the County and CDFG when activity involves earth movement adjacent to spineflower preserves. Submit biweekly monitoring reports during grading to County and CDFG. Submit monthly monitoring reports as needed to CDFG and the County.	
SP-4.6-75. The following measures shall be implemented to avoid and minimize indirect impacts to Newhall Ranch spineflower populations during all phases of project construction: (a) Water Control. Watering of the grading areas would be controlled to prevent discharge of construction water into the Newhall Ranch preserve(s) or on ground sloping toward the preserve(s). Prior to the initiation of grading operations, the project applicant, or its designee, shall submit for approval to the County an irrigation plan describing watering control procedures necessary to prevent discharge of construction water into the Newhall Ranch preserve(s) and on ground sloping toward the preserve(s). (b) Storm Water Flow Redirection. Diversion ditches would be constructed to redirect storm water flows from graded areas away from the Newhall Ranch preserve(s). To the extent practicable,	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A).	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
grading of areas adjacent to the preserve(s) would be limited to spring and summer months (May through September) when the probability of rainfall is lower. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County a storm water flow redirection plan that demonstrates the flow of storm water away from the Newhall Ranch spineflower preserve(s). (c) Treatment of Exposed Graded Slopes. Graded slope areas would be trimmed and finished as grading proceeds. Slopes would be treated with soil stabilization measures to minimize erosion. Such measures may include seeding and planting, mulching, use of geotextiles and use of stabilization mats. Prior to the initiation of grading operations, the project applicant, or its designee, would submit for approval to the County the treatments to be applied to exposed graded slopes that would ensure minimization of erosion.			
SP-4.6-76. In conjunction with submission of the first Newhall Ranch subdivision map in either Mesas Village or that portion of Riverwood Village in which the San Martinez spineflower location occurs, the project applicant, or its designee, shall reassess project impacts, both direct and indirect, to the spineflower populations using subdivision mapping data, baseline data from the Newhall Ranch Final EIR and data from the updated plant surveys (see, Specific Plan EIR Mitigation Measure 4.6-53). This reassessment shall take place during preparation of the required tiered EIR for each subdivision map. If the reassessment results in the identification of new or additional impacts to Newhall Ranch spineflower populations, which were not previously known or identified, the mitigation measures set forth in this program, or a Fish and Game Code section 2081 permit(s) issued by CDFG, shall be required, along with any additional mitigation required at that time.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-77. Direct and indirect impacts to the preserved Newhall Ranch spineflower populations shall require a monitoring and management plan, subject to the approval of the County. The applicant shall consult with CDFG with respect to preparation of the Newhall Ranch spineflower monitoring/management plan. This plan shall be in place when the preserve(s) and connectivity/preserve design/buffers are established (see **Mitigation Measures 4.6-66 and 4.6-67**). The criteria	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Consult with CDFG on preparation of the spineflower management plan. Obtain approval by CDFG and County of qualified botanist/biologist to perform qualitative monitoring.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
set forth below shall be included in the plan. **Monitoring**. The purpose of the monitoring component of the plan is to track the viability of the Newhall Ranch spineflower preserve(s) and its populations, and to ensure compliance with the adopted Newhall Ranch Mitigation Monitoring Program (Biota section). The monitoring component of the plan shall investigate and monitor factors such as population size, growth or decline, general condition, new impacts, changes in associated vegetation species, pollinators, seed dispersal vectors and seasonal responses. Necessary management measures will be identified. The report results will be sent annually to the County, along with photo documentation of the assessed site conditions. The project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, with the concurrence of CDFG, to conduct quantitative monitoring over the life of the Newhall Ranch Specific Plan. The botanist/biologist shall have a minimum of three years experience with established monitoring techniques and familiarity with southern California flora and target taxa. Field surveys of the Newhall Ranch spineflower preserve(s) will be conducted each spring. Information to be obtained will include: (a) an estimate of the numbers of spineflowers in each population within the preserve(s); (b) a map of the extent of occupied habitat at each population; (c) establishment of photo monitoring points to aid in documenting long-term trends in habitat; (d) aerial photographs of the preserved areas at five-year intervals; (e) identification of significant impacts that may have occurred or problems that need attention, including invasive plant problems, weed problems and fencing or signage repair; and (f) overall compliance with the adopted mitigation measures. For a period of three years from Specific Plan re-approval, all areas of potential habitat on the Newhall Ranch site will be surveyed annually in the spring with the goal of identifying previously unrecorded spineflower populations. Because population size and distribution limits are known to vary depending on rainfall, annual surveys shall be conducted for those areas proposed for development in order to establish a database appropriate for analysis at the project-specific subdivision map level (rather than waiting to survey immediately prior to proceeding with the project-specific subdivision map process). In this way, survey results gathered over time (across years of varying rainfall) will provide information on ranges in population size and occupation. New	County and CDFG	**Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit spineflower monitoring and management plan to County for approval in advance. Submit spineflower monitoring results to County. Submit annual report to the County and CDFG.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
populations, if they are found, will be mapped and assessed for inclusion in the preserve program to avoid impacts to the species. **Monitoring/Reporting.** An annual report will be submitted to the County and CDFG by December 31st of each year. The report will include a description of the monitoring methods, an analysis of the findings, effectiveness of the mitigation program, site photographs and adoptive management measures, based on the findings. Any significant adverse impacts, signage, fencing or compliance problems identified during monitoring visits will be reported to the County and CDFG for corrective action by the project applicant, or its designee. **Management**. Based on the outcome of ongoing monitoring and additional project-specific surveys addressing the status and habitat requirements of the spineflower, active management of the Newhall Ranch spineflower preserve(s) will be required in perpetuity. Active management activities will be triggered by a downward population decline over 5 consecutive years, or a substantial drop in population over a 10-year period following County re-approval of the Specific Plan. Examples of management issues that may need to be addressed in the future include, but are not limited to, control of exotic competitive non-native plant species, herbivory predation, weed control, periodic controlled burns or fuel modification compliance. After any population decline documented in the annual populations census following County re-approval of the Specific Plan, the project applicant, or its designee, shall be responsible for conducting an assessment of the ecological factor(s) that are likely responsible for the decline, and implement management activity or activities to address these factors where feasible. If a persistent population decline is documented, such as a trend in steady population decline persistent for a period of 5 consecutive years, or a substantial drop in population detected over a 10-year period, spineflower may be introduced in appropriate habitat and soils in the Newhall Ranch preserve(s), utilizing the bulk spineflower seed repository, together with other required management activity or activities. In connection with this monitoring component, the project applicant, or its designee, shall contract with a qualified botanist/biologist, approved by the County, to complete: (a) a study of the breeding and pollination biology of the spineflower, including investigation into seed physiology to assess parameters that may be important as management tools to guarantee self-sustainability of populations, which may otherwise have limited opportunity for germination; and (b) a population genetics study to document the genetic	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Consult with CDFG on preparation of the spineflower management plan. Obtain approval by CDFG and County of qualified botanist/biologist to perform qualitative monitoring. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit spineflower monitoring and management plan to County for approval in advance. Submit spineflower monitoring results to County. Submit annual report to the County and CDFG.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
diversity of the Newhall Ranch spineflower population. The criteria for these studies shall be to develop data to make the Newhall Ranch spineflower management program as effective as possible. These studies shall be subject to approval by the County's biologist, with the concurrence of CDFG. These activ ities shall be undertaken by a qualified botanist/biologist, subject to approval by the County with the concurrence of CDFG. The project a pplicant, or its designee, shall be responsible for the funding and implementation of the necessary management activity or activities, as approved by the County and CDFG. The length of the active management components set forth above shall be governed by attainment of successful management criteria set forth in the plan rather than by a set number of years.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Consult with CDFG on preparation of the spineflower management plan. Obtain approval by CDFG and County of qualifie d botanist/biologist to perform qualitative monitoring. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit spineflower monitoring and ma nagement plan to County for approval in advance. S ubmit spineflower monitoring results to County. Submit annual report to the County and CDFG.	
SP-4.6-78. To the extent project-related direct and indirect significant impacts on spineflower cannot be av oided or substantially lessened through establishment of the Newhall Ranch spineflower preserve(s), and other avoidance, minimization, or other compensatory mitigation measures, a translocation and reintroduction program may be implemented in consultation with CDFG to further mitigate such impacts. Direct impacts (i.e., take) to occupied spineflower areas shall be fully mitigated at a 4:1 ratio. Impacts to occupied spineflower areas caused by significant indirect effects shall be mitigated at a 1:1 ratio. Introduction of new spineflower ar eas will be achieved through a combination of direct seeding and tr anslocation of the existing soil seed bank that would be impacted by gr ading. Prior to any development within, or disturbance to, spineflo wer populations, on-site and off-site mitigation areas shall be identified and seed and top soil shall be collected. One-third of the collected seed shall be sent to the Rancho Santa Ana Botanical Garden for storage. One third of the seed shall be sent to the USDA National Seed Storag e Lab in Fort Collins, Colorado for storage. One third shall be used for direct seeding of the on-site and off-site mitigation areas. **Direct seeding.** Prior to the initiation of grading, the project applicant, or its designee, shal l submit to the Count y a program for the reintroduction of spineflower on Newhall Ranch. The reintroduction program shall include, among other in formation: (a) location map with scale; (b) size of each introduction polygon; (c) plans and specifications for site preparation, including selective clearing of competing vegetation;	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Send one-third of collected seed to the Rancho Santa Ana Botanical Garden. Send one-third of seed to USDA National Seed Storage Lab. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit spineflower introduction program to CDFG and County. Submit spineflower translocation plan to CDFG and the County.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
(d) site characteristics; (e) protocol for seed collection and application; and (f) monitoring and reporting. The program shall be submitted to CDFG for input and coordination. The project applicant, or its designee, shall implement the reintroduction pr ogram prior to the initiation of grading. At least **two** candidate spineflower reintroduction areas will be created within Newhall Ranch and one candidate spineflower reintroduction area will be identified o ffsite. Both on-site and off-site reintroduction areas will be suitable for the spineflower in both plant community and soils, and be located within the historic range of the taxon. Success criteria shall be included in the monitoring/management plan, with criteria for the ge rmination, growth, Although the reintroduction program is experime ntal at this stage, the County considers such a program to be a f easible form of mitigation at this juncture based upon available studies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the reintroduction program. **Translocation**. Prior to the initiation of grading, the project applicant, or its designee, shall subm it to the County a translocation program for the spineflower. Translocation would salvage the topsoil of spineflower areas to be impacted due to grading. Salvaged spineflower soil seed bank would be translocated to the candida te spineflower reintroduction areas. The translocation program shall in clude, among other in formation: (a) location map with scale; (b) size of each translocation polygon; (c) plans and specifications for site preparati on, including selective clearing of competing vegetation; (d) site charac teristics; (e) prot ocol for topsoil collection and applicat ion; and (f) monitoring and reporting. The translocation program shall be submitted to CDFG for input and coordination. Translocation shall occur within the candidate spineflower reintroduction areas onsite and offsite. Successful criteria for each site shall be included in the monitoring/management plan/with criteria for the germination and growth to reproduction of individual plants for the first year a specified period. Although the translocation program is experimental at this stage, the County considers such a program to be a feasible form of mitigation at this juncture based upon available st udies. Botanists/biologists familiar with the ecology and biology of the spineflower would prepare and oversee the translocation program.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Field Verification:** Send one-third of collected seed to the Rancho Santa Ana Botanical Garden. Send one-third of seed to USDA National Seed Storage Lab. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met. Submit spineflower introduction program to CDFG and County. Submit spineflower translocation plan to CDFG and the County.	
SP-4.6-79. The project applicant, or its designee, shall engage in regular and ongoing consultation with the County and CDFG in	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
connection with its ongoing agricultural operations in order to avoid or minimize significant direct impacts to the spineflower. In addition, the project applicant, or its designee, shall provide 30 days advance written notice to the C ounty and CDFG of the proposed conversion of its ongoing rangeland operations on Newhall Ranch to more intensive agricultural uses. The purpose of the advance notice requirement is to allow the applicant, or its designee, to coordinate with the County and CDFG to avoid or mi nimize significant impacts to the spineflower prior to the applicant's proposed conversion of its ongoing rangeland operations to more intensive agricultural uses. This coordination component will be implemented by or through the County's Department of Regional Planning and/or the Regional Manager of CDFG. Implementation will consis t of the County and/or CDFG conducting a site visit of the proposed conversion area(s) within the 30-day period, and making a determination of whether the proposed conversion area(s) would destroy or significantly impact spineflower population in or adjacent to those area s. If it is determined that the conversion area(s) do not destroy or significantly impact spineflower populations, then the County and/or CDFG will authorize such conversion activities in the proposed conversion area(s). However, if it is determined that the conversion area(s) may destroy or significantly impact spineflower populations, then the County and/or CDFG will issue a stop work order to the applicant, or its designee. If such an order is issued, the applicant, or its designee, shall not proceed with any conversion activities in the proposed conversion area(s). However, the applicant, or the designee, may take steps to relocate the proposed conversion activities in an alternate conversion area(s). In doing so, the applicant, or its designee, shall fo llow the same notice and coordination provisions identified above. This conversion shall not include ordinary pasture maintenance and renovati on or dry land farming operations consistent with rangeland management.		requirements (Appendix A). **Field Verification** : Consultation with the County and CDFG on agricultural operations. Submit written notice to and conduct site visit with County and CDFG when rangeland operations are going to be converted to more intensive agricultural uses. **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	
SP-4.6-80. Upon approval of tentative tr act map(s) impacting the San Martinez portion of the Specific Plan site, the applicant shall work with the Department of Regional Planning staff and SEATAC to establish an appropriately sized preserve area to protect the spineflower population at San Martinez Canyon.	County and CDFG	Refer to the Newhall Ranch Specific Plan MMRP for previously adopted mitigation measure monitoring requirements (Appendix A). **Reporting**: Submit reports to County and CDFG annually (by April 1) until success criteria are met.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
4.1 Surface Water Hydrology and Flood Control			
As noted, the County of Los Angeles has plenary land use authority with respect to the non-biological mitigation measures identified in the EIS/EIR and such measures properly fall within and are subject to the County's authority. The applicant has agreed to be subject to such measures, and to fund the monitoring of all the non-biological mitigation measures through CDFG's environmental consultant for the Project (Aspen Environmental Group). Aspen will monitor implementation of all the non-biological mitigation measures identified herein, to be reimbursed at the applicant's expense, until such time as such measures are incorporated into the County's subdivision map process. **HY-1.** All on-site and off-site flood control improvements necessary to implement the RMDP must be constructed to the satisfaction of the DPW.	LA County Dept. of Public Works[3]	**Plans Approved:** All required flood control improvements shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
HY-2. The design of flood protection facilities for the Santa Clara River shall be based on the following: (a) The DPW's capital flood flow rates (50-year rainfall Discharge, burned and bulked); (b) Soft bottom waterways with levees; and (c) Protective levees and additional facilities, such as drop structures or stabilizers, as required, using DPW design criteria.	LA County Dept. of Public Works	**Plans Approved:** All required flood protection facilities shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
HY-3. Flood control within the Santa Clara River portion of the Newhall Ranch Specific Plan boundaries shall conform to the following requirements, as stated in the Conceptual Backbone Drainage Plan of the Specific Plan: (a) The flood corridor will allow for the passage of the Los Angeles County capital flood discharge without the permanent removal of natural River vegetation (except at bridge crossings);	LA County Dept. of Public Works Corps (HY-3b and 3c)	**Plans Approved:** All applicable flood control improvements and standards required by the Specific Plan shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	

[3] As noted in the record and the CEQA findings, the County of Los Angeles has plenary land use authority with respect to the non-biological mitigation measures identified in the EIS/EIR and such measures properly fall within and are subject to the County's authority. The applicant has agreed to be subject to such measures, and to fund the monitoring of all the non-biological mitigation measures through CDFG's environmental consultant for the Project (Aspen Environmental Group). Aspen will monitor implementation of all the non-biological mitigation measures identified herein, to be reimbursed at the applicant's expense, until such time as such measures are incorporated into the County's subdivision map process.

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
(b) The banks of the River generally will be established outside of the "waters of the United States," as defined by federal laws and regulations and determined by the delineation for the Santa Clara River completed by the Corps in August 1993; (c) Where the Corps delineation width is insufficient to contain the capital flood flow, the flood corridor will be widened by an amount sufficient to carry the capital flood flow without the necessity of permanently removing vegetation or significantly increasing velocity; and (d) Soil cement will occur only where necessary to protect against erosion adjacent to the proposed development. Where existing bluffs are determined to be stable and there is no adjacent proposed development, no bank protection will be built.			
HY-4. Calculation of bulked flow runoff rates for the capital flood in the Santa Clara River watershed shall utilize the fire factors included in the September 2003 DPW Addendum to the 1991 Hydrology Manual Appendix H: Burn Policy Methodology for the Santa Clara River Watershed. All runoff calculations for watershed subareas with impervious values of 15 percent or less must use the burned soil runoff coefficients developed by the DPW for the Santa Clara River watershed.	LA County Dept. of Public Works	**Estimates Approved:** Required calculation to be provided and approved prior to applicable final tract map recordation.	
HY-5. All facilities in developed areas that are not covered under the capital flood protection conditions must be designed for the urban flood. The urban flood is runoff from a 25-year frequency design storm falling on a saturated watershed. Where street flow reaches the street capacity at the property line, the flow must be split and conveyed both in the street and in a drain below street level. Underground drains must be designed with the capacity to carry at least the flow from the 10-year frequency design storm (DPW Hydrology Manual, 1991).	LA County Dept. of Public Works	**Plans Approved:** All required flood control improvements shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
HY-6. Sumps in urban areas must be designed to carry the runoff resulting from a capital flood, as defined by the DPW.	LA County Dept. of Public Works	**Plans Approved:** All required flood control improvements shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles..	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
HY-7. Where a drainage system might have to provide more than a single level of flood protection, the drainage system must be designed with the capacity to carry the bulked capital flood flow from the up-gradient natural canyon in addition to the capacity to protect the developed area from an urban flood (DPW Hydrology Manual, 1991).	LA County Dept. of Public Works	**Plans Approved:** All required flood control improvements shall be depicted on applicable project plans and approved prior to applicable final tract map recordation. **Improvements Accepted:** Prior to approval of building occupancy.	
4.2 Geomorphology and Riparian Resources			
GRR-1. Post-peak stormwater runoff discharges from ~~open channels or~~ stormwater drainage systems must be controlled to minimize localized erosion impacts to River geomorphology and riparian habitat. Discharge flows would be regulated using water control features that must capture the runoff from small, frequent flows (*i.e.*, one- and two-year events). Water and hydromodification control features must be designed in accordance with DPW criteria. Where applicable, energy dissipation structures must be incorporated at drainage outlets to the Santa Clara River to minimize discharge velocities and potential localized erosion.	LA County Dept. of Public Works	**Plans Approved:** Hydromodification control and drainage improvement plans approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
GRR-2. Where practical in River and tributary drainages, bridge crossings shall minimize the number and size of piers and/or columns to minimize localized impacts to River and/or tributary geomorphology and riparian resources.	LA County Dept. of Public Works	**Plans Approved:** Bridge design plans approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
GRR-3. Structural features such as outlets, bank stabilization, grade stabilization structures, bridge abutments, culverts, and other features that may be subjected to River or tributary flows will be constructed of erosion resistant materials such as concrete, soil cement, or secured rip-rap to ensure long-term stability and reduce the need for routine maintenance and/or rehabilitation/replacement activities and be subject to approval by DPW.	LA County Dept. of Public Works	**Plans Approved:** Infrastructure design and construction plans approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
GRR-4. Prior to final subdivision map or the issuance of any grading or building permit, instream tributary (open channels, where applicable) channel design features will be incorporated to control potential hydromodification impacts to geomorphology and riparian resources. The design will be based on erosion potential and other hydrologic modeling to determine appropriate equilibrium slope in the post-development condition as described in the Subregional Stormwater Mitigation Plan	LA County Dept. of Public Works	**Plans Approved:** Hydromodification control plan submitted prior to applicable final tract map recordation/issuance of grading permit or building permit, which ever comes first. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
and be subject to approval by DPW.		Angeles.	
GRR-5. Sediment/debris control structures must be constructed downstream of natural watersheds to protect developed area drainage systems from debris flows. The design capacity for sediment/debris control structures must take into account the classifications stated in the debris production maps provided in Appendix A of the DPW 1991 Hydrology Manual. Sediment/debris control structure capacity and transport rates must be based on the specification stated in the DPW Sedimentation Manual.	LA County Dept. of Public Works	**Plans Approved:** Sediment basin design plans submitted and approved prior to applicable final tract map recordation. **Improvement Construction Verification:** Prior to completion of final field inspection by County of Los Angeles.	
GRR-6. Sediment from upland sources, such as debris basins and other sediment retention activities, will be redistributed in DPW-designated and permitted upland or riparian locations along the Santa Clara River and/or tributaries to reintroduce sediment for beach replenishment purposes.	LA County Dept. of Public Works	**Approved Disposal Sites:** Prior to sediment clearing activities, DPW shall be contacted to identify a permitted and appropriate redistribution site.	
GRR-7. A Geomorphology Monitoring and Management Plan (Plan) will be prepared to ensure that the modified/re-engineered drainages along the major tributaries (Long, Lion, Potrero, Chiquito, and San Martinez Grande Canyons) comply with the mitigation objectives and design goals outlined in the Newhall Ranch Tributary Channel Design Guidelines (PWA 2008). Specifically, the Plan shall include the measures to be implemented to ensure the integrity of the structural elements and a state of "constrained dynamic equilibrium.[4]" The Plan shall specify the following: (1) a framework to collect baseline data to characterize conditions immediately after construction; (2) a post-development monitoring program; (3) a framework to develop erosion and sedimentation threshold parameters and performance standards that activate adaptive management measures across a series of potential future scenarios; and, (4) contingency plans and appropriate remedial measures in the event that management efforts are not successful. The Plan shall be subject to final approval by the U.S. Army Corps of Engineers, CDFG, and DPW and will include (but will not be limited to) the following: 1. Immediately after construction the following activities shall be carried out:	LA County Dept. of Public Works CDFG	**Plans Approved:** The required Plan for each modified/re-engineered drainage shall be prepared and submitted for review and approved prior to the issuance of the applicable rough grading permit. **Plan Implementation.** Monitoring reports shall be submitted to specified agencies in years 1, 3, 5, 10, and 20 following the completion of individual modified/re-engineered drainage construction and after a flow event exceeding the 10-year recurrence interval. Specified monitoring activities are also required after all flood events exceeding the 5-year recurrence interval flow.	

[4] In this context, "constrained dynamic equilibrium" indicates that the channels will be designed to periodically change width, depth, and location on the floodplain in response to changing rainfall and vegetation dynamics, but stay within a predefined corridor and not encroach on infrastructure or fill slopes.

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
An as-built survey shall be conduc ted for the completed channels to include a full longitudinal profile, cross-sections, and all in-channel structures. The channel floodplain and valley toe shall be mapped into three classes of channel migration zone: "green zones" where channel migration is permissible, "yellow zone s" which should trigger site inspections by a qualified engineer or geomorphologist leading to possible stabilization actions, and "red zones" which s hould trigger immediate repair and stabilization efforts. 2. In years 1, 3, 5, 10, and 20 fo llowing construction and after a flow event exceeding the 10-year recurren ce interval, the following activities shall be carried out: A re-survey of the channel longitudinal profile and cross-sections. The longitudinal profile shall include a point on the thalweg every 50 feet where there are no visible steps or gradient changes in the channel profile, with additional points at any gradient changes. The longitudinal profile shall be surveyed in more detail through in-channel structures such as step-pools, with particular attention to the scour pool geometry. A visual inspection of each step-pool structure shall be performed. The inspection shall look for evidence of soil piping or washing out between rocks, movement of rock out of position (*e.g.* into the scour pool), presence of visible geotextile or cut-off wall materials, evidence for outflanking of the structure, exposure of the base of the toe rock. The longitudinal profile shall be comp ared to the as-built profile and the as-built step-pool structures, so that scour relative to the depth of the rock armor can be noted. The low flow channel configuration sh all be compared with the channel migration zones. 3. The monitoring data will be eval uated to determine whether remedial actions or more detailed studies are required. The criteria used to trigger more detailed investigations or maintenance/remedial actions will include (but will not be limited to) the following: If the low-flow channel migrates into the "yellow zone", then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine the probability of further migration into a "red zone". If channel migration towards a "red zone" is occurring at a rate less than 3 feet per year, then this would trigger more frequent site	LA County Dept. of Public Works CDFG	**Plans Approved:** The required Plan for each modified/re-engineered drainage shall be prepared and submitted for review and approved prior to the issuance of the applicable rough grading permit. **Plan Implementation.** Monitoring reports shall be submitted to specified agencies in years 1, 3, 5, 10, and 20 following the completion of individual modified/re-engineered drainage construc tion and after a flow event exceeding the 10-year recurrence interval. Specified monitoring activities are also required after all flood events exceeding the 5-year recurrence interval flow.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
inspections. These inspections shall include annual inspections and inspections after every large flow event (2-year recurrence interval flow or greater) until the channel migration ceases or the channel migrates away from the "red zone". If the rate of migration towards a "red zone" exceeds 3 feet per year or is within 10-feet of a "red zone", then remedial actions will be implemented to stabilize the channel and restore channel functionality to comply with the basis of design criteria. If channel erosion exposes the toe protection of the step-pools, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to and develop a remedial plan to stabilize the channel and structure (*e.g.* extend toe protection deeper, or use grade control downstream to restore the channel be d elevation at th e step-pool). Following review and approval of the plan, the remedial actions will be implemented. If channel erosion results in a decrease in the channel elevation of 1-foot or greater over a length of more than 50 feet or forms "knickpoints", then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine wh ether the erosion/channel incision is likely to migrate and threaten the stability of project structures. If the results of the investigation indicate that the stability of the structures is in jeopardy, then a remedial plan will be developed to stabilize the channel and structure (*e.g.*, keying in additional boulde r ramps to the channel bed). Following review and approval of the plan, the remedial actions will be implemented. If channel aggradation occurs such that step-pool structures are buried by sediment and/or the low-flow channel is no longer well-defined, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine whether the aggradational trend is short-term or long-term. For the purposes of th is monitoring program, "short term" means that the structure was not buried in the previous monitoring survey and "long term" means that the structure was buried during the previous monitoring survey. If aggradation appe ars to be short-term, then a pilot channel shall be cut through the origin al step-pool alignment to ensure that subsequent erosive flows do not flank the step-pools and jeopardize the channel stability. The pilot channel shall have the same dimensions as the original design channel. If aggradation appears to be long-term and the aggradation does not threaten the stability of the channel, then the channel shall be allowed to form its elf (no sediment removal shall be carried out). However, if the aggr adation appears to be long-term and potentially threatens the stability of the channel, then a remedial plan will	LA County Dept. of Public Works CDFG	**Plans Approved:** The required Plan for each modified/re-engineered drainage shall be prepared and submitted for review and approved prior to the issuance of the applicable rough grading permit. **Plan Implementation.** Monitoring reports shall be submitted to specified agencies in years 1, 3, 5, 10, and 20 following the completion of individual modified/re-engineered drainage construc tion and aft er a flow event exceeding the 10-year recurrence interval. Specified monitoring activities are also required after all flood events exceeding the 5-year recurrence interval flow.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
be developed to stabilize the channel. Following review and approval of the plan, the remedial actions will be implemented. After all flood events exceeding the 5-year recurrence interval flow, then a qualified geomorphologist or civil engineer shall conduct an inspection of the channel to evaluate for signs of erosion, "knickpoints", flanking of structures, and piping or erosion around the project structures. If the results of the inspection indicate evidence of channel instability, then a more detailed site investigation shall be carried out to determine whether corrective action is required. In addition to the measures identifie d above, the Plan shall describe the potential remedial techniques to prevent, mitigate, abate, or control undesirable geomorphic response. These measures will include (but will not be limited to) the following: 1. Repair, maintenance or replacement of creek structures and development improvements. 2. Stabilization (either partial or total) of eroded areas or failures of the creek slopes by removal and replacement with appropriate materials. 3. Construction of erosion control m easures that, where feasible, will consist of bio-engineering techniques. 4. Placement of subsurface drainage devices (*e.g.*, underdrains, or horizontal drilled drains). 5. Slope correction (*e.g.*, gradient change, slope trimming or contouring). 6. Construction of additional surface ditches and/or ponds, sediment traps, or backfill of eroded channels. All monitoring reports shall be submitted to the U.S. Army Corps of Engineers, CDFG, LA DPW, and/or ot her designated entities. Prior to implementing any remedial actions, applicable approvals and permits will be obtained from the U.S. Army Corps of Engineers, CDFG, and LA DPW. Following construction, Ne~~whall~~ the applicant will maintain responsibility for implementation of the Plan f~~or an interim period~~ and will be responsible for all monitoring and necessary maintenance/remedial actions~~. After this initial period, Newhall will~~ until transfer of the maintenance and monito ring responsibilities to the LA DPW or other designated entity.	LA County Dept. of Public Works CDFG	**Plans Approved:** The required Plan for each modified/re-engineered drainage shall be prepared and submitted for review and approved prior to the issuance of the applicable rough grading permit. **Plan Implementation.** Monitoring reports shall be submitted to specified agencies in years 1, 3, 5, 10, and 20 following the completion of individual modified/re-engineered drainage construc tion and after a flow event exceeding the 10-year recurrence interval. Specified monitoring activities are also required after all flood events exceeding the 5-year recurrence interval flow.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
GRR-8. Mitigation Measure GRR-8 requires the implementation of in-channel grade control structures similar to those proposed for Alternatives 2-6, and Mitigation Measure GRR-8 is required only for Alternative 7. Grade control structures shall be installed to reduce erosion-related impacts to a less-than-significant level. Similar to Alternatives 2-6, grade control structures provided for Alternative 7 shall implement the following design criteria: a. Creek bed grade control structures at approximately 200 to 400 foot spacing along the drainage corridor will be included. b. These grade control structures will designed to be located at points along the channel where proposed Project grading impacts already will be disturbing the channel bed and banks, wherever possible. c. The grade control structures will be constructed with soil cement, riprap or other grade stabilization methods acceptable to DPW. d. The grade control structures will be at grade or below the existing grade and invert of the channel bed. e. The grade control structures will be designed to function as a drop structure in the event the channel bed slope flattens overtime.	NA This mitigation measure applies only to EIS/EIR Alternative 7 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
4.3 Water Resources			
The RMDP/SCP EIS/EIR determined that mitigation measures previously identified by the Newhall Ranch Specific Plan EIR would reduce water impacts to a less-than-significant level. No additional mitigation measures were required.			
4.4 Water Quality			
WQ-1. Prior to the recordation of any final subdivision map (except those maps for financing or conveyance purposes only) or the issuance of any grading or building permit (whichever comes first), a final SUSMP	LA County Dept. of Public Works	**Plans Approved:** Applicable project design BMPs specified on Table 4.4-12 to be depicted on applicable improvement plans. Grading-related BMPs to be depicted	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
shall be prepared consistent with the terms and content of both the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan and Project Water Quality Technical Report that specifically identifies the BMPs to be used on site. The SUSMP shall be submitted to the DPW for review. The SUSMP shall identify, at a minimum: (1) site design BMPS (as appropriate); (2) the source control BMPs; (3) treatment control BMPs; (4) hydromodification control BMPs; and (5) the mechanism(s) by which long-term operation and maintenance of all structural BMPs would be provided. The BMPs identified in the SUSMP shall include, as applicable, but not be limited to, the PDFs set forth in **Table 4.4-12** of this EIS/EIR and duplicated below. ***Table 4.4-12 is provided in MMRP Appendix B***	and/or Dept. of Regional Planning[5]	on applicable grading plans prior to issuance of grading permit. Long-term operation-related BMPs to be depicted on applicable building plans. **Improvements Construction Verification:** Project design BMPs and operation-related BMPs prior to completion of final field inspection by County of Los Angeles; Installation of grading-related BMPs to be accepted prior to/throughout construction period.	
WQ-2. Prior to issuance of a building permit, and as a part of the design level hydrology study and facilities plan, the project applicant shall submit to the Department of Regional Planning a Landscape and Integrated Pest Management Plan, identified in this **Section 4.4**, which shall be designed to meet the standards set forth below. A Landscape and Integrated Pest Management Plan shall be developed and implemented for common area landscaping within the Specific Plan, Entrada, and VCC Project that addresses integrated pest management (IPM) and pesticide and fertilizer application guidelines. IPM is a strategy that focuses on long-term prevention or suppression of pest problems (*i.e.*, insects, diseases and weeds) through a combination of techniques including: using pest-resistant plants; biological controls; cultural practices; habitat modification (Techniques 1 - 6 below); and the limited use of pesticides according to treatment thresholds, when monitoring indicates pesticides are needed because pest populations exceed established thresholds (Technique 7). The Landscape and Integrated Pest Management Plan will address the following components: 1. Pest identification. 2. Practices to prevent pest incidence and reduce pest buildup. 3. Monitoring to examine vegetation and surrounding areas for pests to	LA County Dept. of Regional Planning	**Plan Approved:** Prior to issuance of building permits for tract maps that contain spineflower preserves.	

[5] As noted in the record and the CEQA findings, the County of Los Angeles has plenary land use authority with respect to the non-biological mitigation measures identified in the EIS/EIR and such measures properly fall within and are subject to the County's authority. The applicant has agreed to be subject to such measures, and to fund the monitoring of all the non-biological mitigation measures through CDFG's environmental consultant for the Project (Aspen Environmental Group). Aspen will monitor implementation of all the non-biological mitigation measures identified herein, to be reimbursed at the applicant's expense, until such time as such measures are incorporated into the County's subdivision map process.

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
evaluate trends and to identify when controls are needed. 4. Establishment of action threshol ds that trigger control actions. 5. Pest control methods - cultura l, mechanical, environmental, biological, and appropriate pesticides. 6. Fertilizer management - soil assessment, fertilizer types, application methods, and storage and handling. 7. Pesticide manage ment - safety (*e.g.*, Material Safety Data Sheets, precautionary statements, protective equipment); regulatory requirements; spill mitigation; groundwater and surface water protection measures associated with pesticide use; and pesticide applicator certifications, licenses, and training (*i.e.*, all pesticide applicators must be certified by the California Department of Pesticide Regulation).			
4.6 Jurisdictional Waters and Streams			
SW-1. To reduce the impacts of the proposed p –Project on federally-protected wetlands, the proposed ch annel design at the downstream end of Potrero Canyon (HARC reach PO-7; (Revised) **Figure 4.6-1**) shall be modified to avoid impacts to the resources in reach PO-7. a~~cre cismontane alkali marsh (seep wetland) at that reach.~~ The proposed lined channel through the wetland shall no t be constructed. Buried bank stabilization in this reach, if constructed at all, shall be limited to the east side of the Potrero Canyon drainage in a configuration similar to that proposed in Alternative 5. The filling and grading activities proposed in Potrero Canyon shall be limited to areas upstream of the wetland, and the wetland shall be avoided.	CDFG **Measure**	**Implementation:** Wetland avoidance measure shall be implemented as part of the design of the Potrero tract map. **Plan Requirements:** Proposed tract map design to be reviewed by CDFG.	
SW-2. The existing wetlands complex at the confluence of Salt Creek and Graves Canyon (HARC reaches SA-3 and SA-4; (Revised) **Figure 4.6-1**), along with the upstream reaches that affect it, would be enhanced through removal of exotic species (carried out in accordance with the methods described in Mitigation Measures SP-4.6-16 and BIO-1), restoration of sediment equilibrium, and recontouring of existing, incised banks. These activities will increase the extent of Corps and CDFG jurisdictional areas in the High Country SMA, and will increase long-term functions and values/services in these areas. This mitigation measure would result in short-term adverse impacts associated with bank recontouring, including construc tion-related noise, emissions from equipment, and temporal loss of upland and riparian habitats in	CDFG	Refer to the Newhall Ranch Specific Plan MMRP (Appendix A) for previously adopted monitoring requirements for mitigation measure SP-4.6-16. Refer to the Biologic Resources section of this MMRP for monitoring requirements for mitigation measure BIO-1.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
creation/enhancement areas.			
SW-3. The applicant shall create or expand Corps jurisdictional wetlands on site, so that the acreage of wetlands on site would exceed the acreage that existed prior to Project implementation. In order to ensure that created wetlands persist in the long-term, wetlands shall be constructed in locations where suitable hydrology can be created by using existing streamflow, without the need for artificial water sources. New or expanded wetland areas shall be created in one or more of the following locations: ● The Salt Creek drainage within the High Country SMA or the Salt Creek area in Ventura County. This area is the first priority for creation of mitigation wetlands, as the entire watershed would be preserved in perpetuity. The lower reach of this drainage supports year-round surface flows, and the presence of an existing, high-quality wetland shows that the topographic and hydrologic conditions are suitable for the persistence of wetlands. Approximately 23.3 acres of new wetlands would be created in the Salt Creek drainage, unless it is determined that a lesser acreage would be sufficient to ensure that the project does not result in a net loss of federally protected wetlands. ● Lower or middle Potrero Canyon. These reaches support intermittent to perennial surface flows, and the broad, flat Potrero canyon bottom provides opportunities for expanded wetlands acreage though the creation of palustrine fringe wetlands. In the event that the proposed creation of 23.3 acres of wetlands in the Salt Creek watershed is insufficient to ensure that the proposed project does not result in a net loss of wetlands, any remaining mitigation acreage would be provided in these two locations. Although the river supports substantial surface flows, with the exception of the conversion of portions of the existing agricultural fields to wetlands outside of the active channel area (above the ordinary high water mark), the creation of mitigation wetlands along the Santa Clara River mainstem is not proposed due to the extreme scouring that occurs within the mainstem at relatively frequent intervals. The geomorphic character of the river is derived from large flood events that move large amounts of sediment, scour vegetation, and reshape the active channel. Because of this, it is uncertain whether mitigation wetlands created along the river mainstem within the active channel would persist in the long run~~, and~~. However, existing agricultural fields along the Santa Clara	CDFG **Measure**	**Implementation:** Wetland creation and/or expansion plans as required by this mitigation measure shall be provided concurrently with applicable Construction Notification (Corps) and Sub-Notification (CDFG) letters for individual projects. **Plans Approved:** Wetland creation/expansion plans shall be approved prior to impacts to jurisdictional resources. **Field Verification:** Prepare and submit annual monitoring reports. Field inspect as necessary until wetland creation/expansion success criteria are achieved.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
River mainstem above the OHWM, ~~the~~ Salt Creek, and Potrero Canyon locations offer ample opportunities to create the wetlands acreage necessary to mitigate the Project's impacts on federally protected wetlands. This mitigation measure woul d result in short-term adverse impacts associated with wetland creation, including construction-related noise, emissions from equipment; and loss of upland habitats in areas where wetlands creation is proposed.			
SW-4. All areas where temporary constr uction impacts affect Corps or CDFG jurisdictional areas (generally, these are areas where impacts would occur due to the construction of Project facilities, but that are outside the permanent footprint of the actual facility), shall be revegetated with appropriate nativ e vegetation after completion of construction in the area. A revegetation plan shall be prepared and implemented in accordance with the terms set forth in mitigation measures **SP-4.6-1 though SP-4.6-15** and **SP-4.6-63**.	CDFG	Refer to the Newhall Ranch Specific Plan MMRP (Appendix A) for previously adopted monitoring requirements for mitigation measure SP-4.6-1 through 16, and SP-4.6-63.	
SW-5. Prior to initiating work in a Corps or CDFG jurisdictional area, the applicant or operator shall submit a Construction Notification to the Corps and a Sub-Notification Agreement to CDFG that shall contain all the information required of a CWA section 404 permit application/ Streambed Alteration Agreement. The information shall include, but not be limited to, an updated jurisdicti onal delineation of waters of the United States and CDFG jurisdictional streams. The acreages and locations of impacts, as well as the acreage and location of mitigation required, will be recalculated and included in the Construction Notification and Sub-Notification Agreement.	CDFG	**Notification Submittal:** The required Construction Notification (Corps) and Sub-Notification (CDFG) shall be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas.	
SW-6. To the extent that on-site mitigation for impacts to jurisdictional tributary drainages is insufficient to meet the mitigation ratios required by revised Mitigation Measure BIO-2, then the remaining mitigation obligation shall be met at off-site properties within the Santa Clara River watershed, via use of one or more of the following mitigation approaches (at applicant's option): (a) creation of additional jurisdictional acreage in tributaries to the Santa Clara River occurring off site such that the mitigation site has an equal or gr eater value than the impacted site; (b) preservation of property containi ng jurisdictional tributaries to the Santa Clara River having an equal or greater value than the impacted site via a conservation easement or an alogous method; or (c) habitat enhancement activities in jurisdictional tributaries for the necessary acreage (*e.g.*, exotic species removal under the terms and conditions	CDFG	**Measure Implementation:** Any future need for off-site wetland creation shall be determined in conjunction with Construction Notification (C orps) and Sub-Notification (CDFG), which must be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas. Refer to monitoring requirements for mitigation measures BIO-2, BIO-9 and BIO-10 for applicable monitoring requirements for off-site wetland creation.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
specified in Mitigation Measures BIO-9 and BIO-10).			
SW-7 To the extent that on-site mitigation for impacts to the Santa Clara River mainstem is insufficient to meet the mitigation ratios required by revised Mitigation Measure BIO-2, then the remaining mitigation obligation shall be met at off-site locations within the Santa Clara River mainstem, via use of one or more of the following mitigation approaches (at applicant's option): (a) creation of additional jurisdictional acreage in the Santa Clara River mainstem outside the Project area such that the mitigation site has an equal or greater value than the impacted site; (b) preservation of property containing a reach of the Santa Clara River mainstem having an equal or greater value than the impacted site via a conservation easement or an alogous method; or (c) habitat enhancement activities within the river mainstem for the necessary acreage (*e.g.*, exotic species removal under the terms and conditions specified in Mitigation Measures BIO-9 and BIO-10). Although revised Mitigation Measure BIO-2 is included in the Biological Resources section, the measure is re ferenced in this section and is reproduced below for convenience. **BIO-2** The permanent removal of exis ting habitats in Corps and/or CDFG jurisdictional areas in the Santa Clara River and tributaries, shall be replaced by creating habitats of similar functions and values/services (see Mitigation Measure BIO-4 and Mitigation Measure SW-3 of Section 4.6 of the Final EIS/EIR) on the Project site, or as allowed under Mitigation Measure BIO-10. **a.** Permanent impacts to Corps jurisdiction (which is a subset of CDFG jurisdiction) are to be mitigated by initiating mitigation site creation and/or restoration in advance of impacts, to replace the combined loss of acreage, functions and services at a minimum 1:1 ratio. Initiation of a Corps mitigation site is defined as: 1) completion of site preparation; 2) installation of temporary irrigation; and 3) seeding and/or planting of the mitigation site. For detailed information please refer to the Mitigation Plan for Impacts to Waters of the United States included in the Draft 404(b)(1) Alternatives Analysis in A ppendix F1.0 of the Final EIS/EIR. ~~The Salt Creek creation and restoration site~~ The Potrero Canyon CAM creation and restoration site and the Mayo Crossing re storation site (i.e., an existing agricultural field) are c onsidered the initial sites to be implemented prior to Corps jurisdictional impacts by development, thereby establishing upfront mitigation credits. As individual Project components are proposed for constr uction, consistent with the	CDFG	**Measure Implementation:** Any future need for off-site wetland creation shall be determined in conjunction with Construction Notification (C orps) and Sub-Notification (CDFG), which must be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas. Refer to monitoring requirements for mitigation measures BIO-2, BIO-9 and BIO-10 for applicable monitoring requirements for off-site wetland creation.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
construction notification, quantities of mitigation acreage required to offset permanent impact acreages shall be calculated and compared to surplus pre-mitigation area remaining. A project would not proceed unless adequate mitigation capacity (area suitable for Corps mitigation) is demonstrated. Temporary impact areas shall be mitigated in place in a manner that restores impacted functions and services as described in the mitigation plan noted above. If upfront compensatory mitigation cannot be achieved, a Corps-approved method would be utilized to determine the additional compensatory mitigation to offset the temporal loss of functions and services not included in the 1:1 mitigation ratio for permanent impacts. These measures satisfy the Corps mitigation requirements for impacts to Corps jurisdictional areas. However, impacts to jurisdictional areas (which include all areas subject to Corps and/or CDFG jurisdiction) are also subject to all of the mitigation requirements for impacts to CDFG jurisdiction, including BIO-2b. **b.** For permanent and temporary impacts to CDFG jurisdiction, consistent with the sub-notification, quantities of mitigation acreage required shall be calculated in accordance with the criteria below: • If suitable mitigation sites have met success criteria (BIO-6) prior to disturbance at the impact site, the mitigation sites shall replace the permanently impacted habitats in kind at a 1:1 ratio. • If a suitable mitigation site has not met success criteria prior to disturbance of the impact site, habitat shall be replaced in kind (tributary for tributary impacts, river for river impacts) according to the replacement ratios specified in **Table 4.5-68**, below. These ratios provide compensatory mitigation for temporal losses of riparian function by considering the existing functional condition of the resources to be impacted, as well as time required for different vegetation types to become established and mature. • If a suitable mitigation site has not been initiated within two years following disturbance of the impact site, but is initiated within five years following such disturbance, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by **Table 4.5-68**, below, plus 0.5:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated three years after disturbance, the required replacement ratio would be 2.5:1.)	CDFG	**Measure Implementation:** Any future need for off-site wetland creation shall be determined in conjunction with Construction Notification (Corps) and Sub-Notification (CDFG), which must be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas. Refer to monitoring requirements for mitigation measures BIO-2, BIO-9 and BIO-10 for applicable monitoring requirements for off-site wetland creation.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
• If a suitable mitigation site has not been initiated within five years following disturbance of the impact site, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by **Table 4.5-68**, below, plus 1:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated six years after disturbance, the required replacement ratio would be 3:1.) Where temporary impacts to CDFG-jurisdictional areas are proposed, the mitigation acreage required shall be determined based upon the duration of the proposed construction disturbance and the type of vegetation to be impacted. As individual Project components are proposed for construction, consistent with the sub-notification process, the quantities of mitigation acreage required for temporary impacts to CDFG jurisdictional areas shall be calculated according to the following criteria: • If suitable mitigation sites have met success criteria prior to temporary disturbance at the impact site, the mitigation sites shall replace the temporarily impacted habitats in kind at a 1:1 ratio regardless of the duration of the temporary disturbance. • If the duration of temporary disturbance is less than two years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. • If the duration of temporary disturbance is between two and five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1.5:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. • If the duration of temporary disturbance exceeds five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 2:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. In lieu of the habitat replacement described above and subject to CDFG approval, removal of invasive, exotic plant species from existing CDFG	CDFG	**Measure Implementation:** Any future need for off-site wetland creation shall be determined in conjunction with Construction Notification (Corps) and Sub-Notification (CDFG), which must be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas. Refer to monitoring requirements for mitigation measures BIO-2, BIO-9 and BIO-10 for applicable monitoring requirements for off-site wetland creation.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
jurisdictional areas, followed by restoration/revegetation, may also be used to offset impacts. If this method is employed, mitigation shall be credited at an acreage equivalent to the percentage of exotic vegetation present at the restoration site. For example, if a 10-acre jurisdictional area is occupied by 10% exotic species, restoration shall be credited for 1 acre of impact. If appropriate, as authorized by CDFG, reduced percentage credits may be applied for invasive removal with passive restoration (weeding and documentation of natural recruitment only). ***Table 4.5-68 is provided in MMRP Appendix C.***	CDFG	**Measure Implementation:** Any future need for off-site wetland creation shall be determined in conjunction with Construction Notification (Corps) and Sub-Notification (CDFG), which must be submitted prior to the start of grading or other ground disturbing work within jurisdictional areas. Refer to monitoring requirements for mitigation measures BIO-2, BIO-9 and BIO-10 for applicable monitoring requirements for off-site wetland creation.	
4.7 Air Quality			
AQ-1. Diesel-powered construction equipment shall use ultra low sulfur diesel fuel, as defined in SCAQMD Rule 431.2. **AQ-2.** Develop a Construction Traffic Emission Management Plan to minimize emissions from vehicles including, but not limited to, scheduling truck deliveries to avoid peak hour traffic conditions, consolidating truck deliveries, and prohibiting truck idling in excess of 5 minutes. **AQ-3.** Suspend the use of all construction equipment during first-stage smog alerts. **AQ-4.** Use electricity or alternate fuels for on-site mobile equipment instead of diesel equipment, to the extent feasible. **AQ-5.** Maintain construction equipment by conducting regular tune-ups according to the manufacturers' recommendations. **AQ-6.** Use electric welders to avoid emissions from gas or diesel welders, to the extent feasible. **AQ-7.** Use on-site electricity or alternative fuels rather than diesel-powered or gasoline-powered generators, to the extent feasible. **AQ-8.** Prior to use in construction, the Project applicant will evaluate the feasibility of retrofitting the large off-road construction equipment that will be operating for significant periods. Retrofit technologies such as particulate traps, selective catalytic reduction, oxidation catalysts, air enhancement technologies, *etc.*, will be evaluated. These technologies	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved.** All construction emission reduction measures shall be provided on grading and construction plans. **Measure Implementation.** All construction emission reduction measures shall be implemented throughout the project's construction period.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
will be required if they are certified by CARB and/or the USEPA, and are commercially available and can feasibly be retrofitted onto construction equipment. **AQ-9.** Reduce traffic speeds on all unpaved roads to 15 miles per hour or less. **AQ-10.** Water active sites at least three times daily during dry weather. **AQ-11.** Schedule construction activities that affect traffic flow to off-peak hours (*e.g.*, between 7:00 PM and 6:00 AM, and between 10:00 AM and 3:00 PM). **AQ-12.** Use construction equipment that complies with the requirements and compliance schedule of the adopted CARB Regulation for In-Use Off-Road Diesel Vehicles in effect at the time of use and use ~~only~~ Tier 1 construction equipment during all construction activities, only if Tier 2 or newer equipment is not available. ~~or newer diesel-fueled (or alternative-fueled) construction equipment during all construction activities~~. **AQ-12a.** Construction shall be planned in such a way as to minimize heavy construction activity involving the use of diesel-fueled construction equipment within 500 meters of an occupied residence to the extent practical. Heavy construction activity that occurs within 500 meters of an occupied residence that involves the use of diesel-fueled construction equipment shall prohibit non-essential idling and shall utilize equipment certified to the Tier 2 or newer emission standard. Equipment shall be routed in such a way as to minimize travel within 500 meters of an occupied residence to the extent practical.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved.** All construction emission reduction measures shall be provided on grading and construction plans. **Measure Implementation .** All construction emission reduction measures shall be implemented throughout the project's construction period.	
AQ-13. Please see Mitigation Measure **GCC-1** in **Section 8.0**. (**AQ-13** is the same measure as **GCC-1**.)	NA NA		
AQ-14. All commercial and public buildings on the applicant's land holdings that are facilitated by approval of the proposed Project shall be designed to provide improved insulation and ducting, low E glass, high efficiency HVAC equipment, and energy efficient lighting design with occupancy sensors or equivalent to ensure that all commercial and public buildings operate at levels fifteen percent (15%) better than the standards ~~presently~~ required by the 2008 version of Title 24 (~~2008)~~. Notwithstanding this measure, all nonresidential buildings shall be designed to comply with the then-operative Title 24 standards applicable at the time building permit applications are filed. For example, if new standards are adopted that supersede the 2008 Title 24 standards, the	LA County Building Dept. and/or Dept. of Regional Planning	**Plans Approved.** Prior to issuance of applicable building permits.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
nonresidential buildings shall be de signed to comply with those newer standards and, if necessary, exceed those standards by an increment that is equivalent to a 15 percent exceedance of the 2008 Title 24 standards.			
AQ-15. The applicant shall produce or cause to be produced ~~or purchase~~ renewable electricity, or s ecure greenhouse gas offsets or credits from a public agency (*e.g.*, CARB; SCAQMD) endorsed market, equivalent to the installation of 2.0 ~~kW~~ one photovoltaic (*i.e.*, solar) power system~~s~~ no smaller than 2.0 kilowatts, when undertaking the design and construction of each single-family detached residential unit on the Project site . ~~on all single-family detached residential units in the Specific Plan and Entrada planning areas that are facilitated by approval of the proposed Project. 2.0 kW is roughly equivalent to the amount of electricity used annually by a single family home. In lieu of this requirement and at the applicant's option, prior to the start of construction of any new phase of any individual subdivision on the Specific Plan or Entrada planning areas, the applicant shall secure CO_2 equivalent offsets or credits, similar to the CO_2 equivalent reduction that would be provided by the use the renewable electricity sources described above, from either: a) the Climate Action Reserve (CAR) or the California Climate Action Registry, or b) the Chicago Climate Exchange (CCX). Alternatively, and at the applicant's option, the applicant may pay the equivalent amount of funds that would be due to buy credits from the CAR or the CCX to the SCAQMD for greenhouse gas emission mitigation purposes. In addition to the implementation of one of the electricity generation/greenhouse gas emission reduction measures described above, the use of individual photovoltaic systems shall be considered when undertaking the design and construction of all single family detached residential units~~.	LA County Dept. of Regional Planning	**Plans Approved.** Demonstrate compliance with specified requirements prior to approval of applicable building permits.	
AQ-16. The applicant shall produce or cause to be produced ~~or purchase~~ renewable electricity, or s ecure greenhouse gas offsets or credits from a public agency (*e.g.*, CARB; SCAQMD) endorsed market, equivalent to the installation of one photovoltaic system~~s~~ no smaller than 2.0 kilowatts, on each 1,600 square feet of nonresidential roof area provided on the Project site. ~~on non-residential buildings on the Project site capable of producing 1,920 kW of electricity. In lieu of this requirement and at the applicant's option, prior to the start of construction of any phase of any individual subdivision on the Project site that contains non-residential land uses, the applicant shall secure CO_2 equivalent offsets or credits, similar to the CO_2 equivalent reduction that would be provided by the use the renewable electricity sources described above, from either: a) the Climate Action Reserve (CAR) or the~~	LA County Dept. of Regional Planning	**Plans Approved.** Demonstrate compliance with specified photovoltaic system installation requirements prior to approval of applicable building permits.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
~~California Climate Action Registry, or b) the Chicago Climate Exchange (CCX). Alternatively, and at the applicant's opt ion, the applicant may pay the equivalent amount of funds that would be due to buy credits from the CAR or the CCX to the SCAQMD for greenhouse gas emission mitigation purposes. In addition to the implementation of one of the electricity generation/greenho use gas emission reduction measures described above, the installation of individual photovoltaic systems shall be considered when undertaking the design and construction of non residential buildings on the Project site~~.			
4.8 Traffic			
TR-1. The Project applicant shall design and construct Magic Mountain Parkway west of Westridge Parkway in a manner that increases the planned six-lane augmented roadway to an eight-lane roadway. (This mitigation measure is applicable to Alternative 6 only.)	NA This mitigation measure applies only to EIS/EIR Alternative 6 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-2. The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane roadway. (This mitigation measure is applicable to Alternative 7 only.)	NA This mitigation measure applies only to EIS/EIR Alternative 7 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-3. The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	NA This mitigation measure applies only to EIS/EIR Alternative 6 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-4. The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Rye Canyon Road by increasing the planned six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 6 and 7 only.)	NA This mitigation measure applies only to EIS/EIR Alternatives 6 and 7, and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-5. The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Magic Mountain Parkway by increasing the planned six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 2, 3, and 7 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
TR-6. The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Magic Mountain Parkway by increasing the planned six-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	NA This mitigation measure applies only to EIS/EIR Alternative 6 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-7. The Project applicant shall contribute its fair-share of the costs to add additional capacity to Rye Canyon Road east of The Old Road by increasing the existing six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 2 through 7.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-8. The Project applicant shall contribute its fair-share of the costs to add additional capacity to Via Princessa east of Santa Clarita Road by increasing the planned six-lane road way to a six-lane roadway. (This mitigation measure is applicable to Alternatives 2, 3, 4 and 5 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits applicable buildings.	
TR-9. The Project applicant shall contribute its fair-share of the costs to add additional capacity to McBean Parkway south of Avenue Scott by increasing the planned eight-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	NA This mitigation measure applies only to EIS/EIR Alternative 6 and is not applicable to the project approved by Corps and CDFG. Therefore, no monitoring requirements are necessary for this mitigation measure.		NA
TR-10. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Parker. (This mitigation measure is applicable to Alternatives 2 and 3.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-11. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Hasley. (This mitigation measure is applicable to Alternatives 2, 3, 6 and 7 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-12. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of SR-126. (This mitigation measure is applicable to Alternatives 2, 3, 4, 6 and 7 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits applicable buildings.	
TR-13. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Rye Canyon. (This mitigation measure is applicable to Alternatives 2 and 3 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-14. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of	LA County Dept. of	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Magic Mountain Parkway. (This mitigation measure is applicable to Alternatives 2 and 3 only.)	Public Works	applicable buildings.	
TR-15. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of Valencia Boulevard. (This mitigation measure is applicable to Alternatives 2, 3, 4 and 6 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-16. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direction to the segment of I-5 south of McBean Parkway. (This mitigation measure is applicable to Alternatives 2, 3, 4, 5 and 6 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-17. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each direc tion, and one truck lane in the southbound direction, to the segment of I-5 south of Lyons Avenue. (This mitigation measure is applicable to Alternatives 2, 3, 4, 5 and 6 only.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
TR-18. The Project applicant shall contribute its fair-share of the costs of adding one HOV lane in each di rection, two truck lanes in the southbound direction, and one truck la ne in the northbound direction to the segment of I-5 south of Calgrove Avenue. (This mitigation measure is applicable to Alternatives 2 through 7.)	LA County Dept. of Public Works	**Measure Implementation:** Receipt of fair share funding or bonding prior to issuance of occupancy permits for applicable buildings.	
4.9 Noise			
NOI-1. Pile driving vibration due to the development of the Commerce Center Drive bridge shall be reduced by: • identifying all uses in the vicinity that may be adversely affected by the vibrations, including Travel Village, residences built in earlier phases of Mission Village and Landmark Village, and non-residential land uses that may use vibration-sensitive *etc.*; and • installing seismographs at the aforementioned sensitive locations to ensure that Section 12.08.560 of the County's *Noise Ordinance* is not exceeded, and/or that the pile dr iving would not cause structural damage or adversely affect vibration-sensitive equipment; and • adjusting vibration amplitudes of the pile driving on the conditions of the affected structures, the sensitivity of equipment, and/or human tolerance; and/or	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation:** Vibration reduction requirements shall be implemented prior to the start of construction activities for the Commerce Center Drive bridge and throughout the pile installation phase of the project.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
• To the extent feasible, the Project developer should utilize cast-in-drilled-hole (CIDH) piles in lieu of pile driving.			
4.10 Cultural Resources			
CR-1a. The CA-LAN-2233 archaeological site, including a 100-foot buffer, shall be incorporated into the proposed Project design as a park area. To protect the archaeological resources from impacts associated with park development, the site shall be preserved by placing water permeable netting and two feet of sterile fill material over the area. No excavation of the site shall occur prior to the placement of the fill soil. If avoidance of the site and buffer is not feasible, Mitigation Measure CR-2 shall apply. The applicant shall include this mitigation measure as a note on a separate information sheet to be recorded with the final map. The location of the archaeological site shall not be identified on the informational sheet to protect the site from vandalism.	LA County Dept. of Regional Planning	**Plans Approved.** Required park area and buffer shall be depicted on the applicable tract map prior to recordation. Required information note to be recorded concurrently with tract map.	
CR-1b. The CA-LAN-2133 archaeological site, including a 100-foot buffer, shall be incorporated into the proposed Project design as "Open Area." To the extent possible, proposed road construction activities shall avoid the resource site and buffer area. If avoidance of the site and buffer is not feasible, Mitigation Measure CR-2 shall apply. The applicant shall include this mitigation measure as a note on a separate information sheet to be recorded with the final map. The location of the archaeological site shall not be identified on the informational sheet to protect the site from vandalism.	LA County Dept. of Regional Planning	**Plans Approved.** Required open area and buffer shall be depicted on the applicable tract map prior to recordation. Required information note to be recorded concurrently with tract map.	
CR-2. In the event that any portion of archaeological sites CA-LAN-2133 and -2233 cannot be avoided by planned construction, a Phase III data recovery mitigation program consistent with federal, state, and county guidelines and funded by the applicant will be conducted. This will include consultation with the Tataviam community pursuant to the requirements of the Tataviam Agreement; hand excavation of a statistically valid sample of the impacted site area by qualified professional archaeologists; and processing, analysis, and curation of the recovered artifact assemblage.	LA County Dept. of Regional Planning	**Measure Implementation.** If this measure is to be implemented, the required Phase III investigations shall be completed prior to the start of grading activities at the affected archaeological site(s) and in the surrounding buffer area.	
CR-3. Pursuant to the requirements of the Tataviam Agreement, a qualified archaeologist and a Native American monitor shall monitor all earth disturbances, including scarification and placement of fill, within 300 feet of any known archaeological site. If archaeological discoveries are made, earth disturbing activities will be diverted to other locales	LA County Dept. of Regional Planning	**Measure Implementation:** Agreement with a qualified monitor to be provided to the County prior to the start of grading activities within 300 feet of known archaeological sites.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
while the archaeological resources are exposed, mapped, evaluated, and recovered, as appropriate.			
CR-4. During any earth disturbance within 300 feet of any known archaeological site, the area of the site and a 50-foot buffer shall be temporarily fenced with chain link flagged with color to ensure construction avoidance.	LA County Dept. of Regional Planning	**Measure Implementation:** Archaeological monitor to field verify the location and installation of required protective fencing.	
CR-5. In the event that arch~~aeological remains or sites~~ cultural resources are encountered during grading anywhere in the Project area, work shall be stopped immediately or redirected until a qualified archaeologist and Native American representative pursuant to the requirements of the Tataviam Agreement are retained by the applicant to evaluate the s~~ignificance~~ eligibility of the f~~ind~~ resources pursuant to CRHR and NRHP criteria. If the remains are found to be significant, they shall be subject to a Phase III data recovery mitigation program consistent with federal ~~Corps~~, state, and county guidelines and funded by the applicant to the extent allowed by law (see, Pub. Resources Code § 21083.2).	LA County Dept. of Regional Planning	**Plans Approved:** This requirement shall be noted on all tract maps and grading plans.	
CR-6 If, during any phase of Project construction, there is the discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps, which are based on Public Resources Code section 5097.98 and State CEQA Guidelines section 15064.5(e), shall be taken: 1. There will be no further excavation or disturbance of the site or any nearby area reasonably susceptible to overlying adjacent human remains until: a. The Los Angeles County Coroner is contacted to determine that no investigation of the cause of death is required; and b. If the Coroner determines the remains to be Native American: (i) The Coroner shall contact the Native American Heritage Commission within 24 hours; (ii) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendant from the deceased Native American; and (iii) The most likely descendent may make recommendations to the Project applicant for means of treating or disposing of, with	LA County Dept. of Regional Planning	**Measure Implementation:** Archaeological monitor to field verify the discovery or recognition of any human remains during any phase of Project construction. Monitor to coordinate with Los Angeles County Coroner as required.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code section 5097.98, or, 2. Where the following conditions occur, the Project applicant, or its designee, shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance: a. The Native American Heritage Commission is unable to identify a most likely descendant or the most likely descendant failed to make a recommendation within 24 hours after being notified by the Commission; b. The descendant identified fails to make a recommendation; or c. The Project applicant, or its designee, rejects the recommendation of the descendant, and mediation by the Native American Heritage Commission fails to provide measures acceptable to the Project applicant.	LA County Dept. of Regional Planning	**Measure Implementation:** Archaeological monitor to field verify the discovery or recognition of any human remains during any phase of Project construction. Monitor to coordinate with Los Angeles County Coroner as required.	
4.11 Paleontological Resources			
PR-1. A qualified paleontologist shall be retained to monitor and salvage scientifically significant fossil remains. The duration of these inspections depends on the potential for the discovery of fossils, the rate of excavation, and the abundance of fossils. (a) The Saugus and Pico Formations have a high potential to yield paleontological resources and will require continuous monitoring during all grading activities. This may require use of multiple paleontologists working on the site at the same time if simultaneous ground disturbing activities are occurring over an extensive area to assure all areas of excavation are being fully monitored for the presence of paleontological resources. The number of required monitors shall be determined by Project's monitoring paleontologist. (b) The older dissected Pleistocene formations have a moderate potential to yield paleontological resources and will require half-time monitoring during all grading activities by a qualified paleontologist(s). Because of the large size and long duration of this Project, it will be necessary to periodically review the paleontological potential assigned to each rock unit. This shall be done at the end of each phase of grading.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plan Requirements** . These requirements shall be included as notes on all grading plans. **Measure Implementation.** LA County Natural History Museum-approved inspector shall be present during grading activities in specified areas.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
This reassessment of potential will be used to develop mitigation plans for future phases of development. If fossil production is lower than expected, the duration of the monitoring efforts should be reduced to less than continuous monitoring during all grading activities.			
PR-2. The paleontologist, in consulta tion with the grading contractor, developer, and Los Angeles County in spector, shall have the power to divert temporarily or direct grading efforts in the area of an exposed fossil to allow evaluation and, if necessary, salvage of exposed fossils.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved**. These requirements shall be included as notes on all grading plans.	
PR-3. Microinvertebrates are known to exist in the Saugus Formation within the Project area. Samples of the Saugus Formation rock units shall be collected periodica lly as directed by the Project paleontologist. Appropriate materials for collection are samples of at least 2,000 pounds of rock from likely horizons identif ied by the Project paleontologist. These samples can be stockpiled (to a llow for processing at a later time) to avoid delays in grading activities. The representative rock samples shall be analyzed by a qualified paleontologist for data collection purposes. Based on the results of initial evaluations, the number of collection samples in subsequent gr ading phases may be increased or decreased as deemed appropriate by the Project paleontologist.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved**. These requirements shall be included as notes on all grading plans. **Measure Implementation.** LA County Natural History Museum-approved inspector shall be present during grading activities in specified areas.	
PR-4. Because fossils were discovered during the course of the 1994 field survey, pre-grading salvage is necessary in localities 13, 13A, 14, and 23, as presented in the 1994 Paleontological Technical Report prepared by RMW. This report provides specific details pertaining to the existing conditions as they relate to paleontological resources of the Specific Plan portion of the RMDP and was presented in the Newhall Ranch Specific Plan Program EIR, and is available for public review at the Los Angeles County Department of Regional Planning, 320 W. Temple Street, Los Angeles, Calif ornia, 90012. These locations represent significant fossil discover ies. A minimum of 2,000 pounds of rock should be collected at each s ite, stockpiled, and screen washed before grading begins at these locations. The representative rock samples shall be analyzed by a qualified paleontologist for data collection purposes. Based on the results of initial evaluations, the number of collection samples in subsequent gr ading phases may be increased or decreased as deemed appropriate by the Project paleontologist.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved**. These requirements shall be included as notes on all grading plans. **Measure Implementation.** Prior to the start of grading activities in specified ar eas, an LA County Natural History Museum-approved paleontologist shall collect and test the required samples.	
PR-5. Scientific specimens are to become the property of a public, nonprofit educational institution, such as the Los Angeles County	LA County Dept. of Public Works	**Plans Approved**. Submit required agreement prior to the approval of a grading permit.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Museum of Natural History (or similar institution). Most institutions are now requiring, as conditions for accepti ng the materials, that significant fossils be prepared, identified to a reasonable level, and catalogued before donation. Therefore, to meet th ese requirements, prior to the start of Project-related grading, an agreement shall be reached with a suitable scientific repository regarding acceptance of the fossil collection.	and/or Dept. of Regional Planning		
PR-6. Locations of recorded fossil deposits shall remain confidential and shall be disclosed to qualified paleontologists or other qualified individuals on a "need to know" basis.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved**. This requirement shall be included as a note on all grading plans.	
PR-7. To assure compliance with the Los Angeles County guidelines and CEQA, a final report summarizing the results of the mitigation efforts is necessary. To adequately report the results of the mitigation efforts, the report shall include: (1) an itemized inventory of the fossils; (2) pertinent geologic and stratigra phic data; (3) field notes of the collectors; and (4) indication of the repository. Because the Newhall Ranch Specific Plan and the VCC and Entrada planning areas will be developed in phases, a final report shall be prepared at the end of the grading activities associated with each phase of development. This report shall provide the information necessary to reassess the paleontological potential of each rock unit graded and shall include recommendations for future monitoring efforts in those rock units.	LA County Dept. of Regional Planning	**Measure Implementation.** The required report shall be submitted within two weeks after the conclusion of grading activities in each project development phase.	
4.12 Agricultural Resources			
AG-1. In order to minimize the premature conversion of agricultural lands and to track that conversion, prior to issuance of the first grading permit in the Project area where agricultural soils are designated as prime farmland, unique farmland, and/or farmland of statewide importance exist (Pub. Resources Code secti on 21060.1), the applicant or its designee shall prepare a phasing map to document the phased discontinuation of existing agricultural activities located within the Project area over the course of its development. ~~Newhall Land shall enter into a Memorandum of Understanding with the Cal ifornia Department of Fish and Game to develop a phasing plan for the discontinuation of existing agricultural operations located throughout the Specific Plan site.~~	LA County Dept. of Regional Planning CDFG	**Measure Implementation.** The applicant and CDFG shall provide the County with the required phasing map prior to the recordation of the first tract map that will result in the discontinuation of existing agricultural operations.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
AG-2. Newhall Land shall dedicate a permanent agricultural conservation easement for 138 acres of agricultural land located in the Salt Creek conservation area and on adjoining agricultural lands.	LA County Dept. of Regional Planning	**Measure Implementation.** The specified easement shall be provided in conjunction with the recordation of the applicable tract map.	
4.13 Geology and Geologic Hazards			
The RMDP/SCP EIS/EIR determined that mitigation measures previously identified by the Newhall Ranch Specific Plan EIR would reduce geology and geologic hazard impacts to a less-than-significant level. No additional mitigation measures were required.			
4.13 Land Use			
The RMDP/SCP EIS/EIR, nor the Specific Plan EIR, provided any mitigation measures that pertain directly to land use-related impacts. Therefore, there are no monitoring requirements for the Land Use issue area.	NA NA NA		
4.15 Visual Resources			
VR-1. Riprap shall be ungrouted and shall contain material with colors and textures that are harmonious with the surrounding natural riverbed and bank materials. The same or similar type, color, and size of riprap shall be used throughout the Project area.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved** : The specified rip-rap design requirements shall be depicted on project-related grading and drainage plans.	
VR-2. Necessary grouted riprap and bridges shall contain materials with colors and textures that are harmonious with the surrounding natural riverbed and bank materials. The same or similar type, color, and size of riprap shall be used throughout the Project area.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Plans Approved** : The specified rip-rap design requirements shall be depicted on project-related grading and drainage plans.	
4.16 Parks, Recreation and Trails			
The RMDP/SCP EIS/EIR determined that mitigation measures previously identified by the Newhall Ranch Specific Plan EIR would ensure that the Specific Plan project would not result in significant recreation-related impacts. No additional mitigation measures were required.	NA NA		**NA**

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
4.17 Hazards, Hazardous Materials and Public Safety			
PH-1. During the earthwork phase of construction, all known abandoned oil wells located beneath the Project site shall be exposed to allow DOGGR to examine the well heads, assess any potential for methane, and determine if reabandonment of any wells will be required. Additionally, any unknown (*i.e.*, "wildcat") wells encountered during earthwork shall also be subject to investigation and potential reabandonment requirements of DOGGR as described below: • File Notice of Intent to re-abandon well; • Excavate and expose several feet of well casing; • Perform hot tap -- a method of drilling a hole into the casing under control in order to deal with possible pressure; • Install a wellhead and blow out prevention equipment; • Move drill rig into place and drill out any surface cement plug or any other cement plug to reach a minimum clean-out as required by DOGGR; • Place cement plugs of varying lengths as required by DOGGR; • All portions of well not plugged with cement are to be filled with inert mud fluid having a density of 70 pounds per cubic foot and a gel strength of 25 pounds per 100 square feet; • Move out drill rig; • Cut off casing at least five feet below final finished grade; • Weld a steel plate on top of the wellhead; • Backfill and compact excavation and clean up location; • Survey the center point of the buried well using GPS instrumentation; • Place a permanent survey mark at the surface, demarcating a buried, abandoned oil well; and • Submit the re-abandonment record to DOGGR within 60 days upon completion of work.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation:** All known abandoned oil and gas wells shall be depicted on grading plans. Notes describing required well abandonment requirements shall be provided on grading plans. Any required oil or gas well setbacks shall be depicted on proposed building plans.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
Additionally, proposed development plans shall be evaluated by means of the Construction-Site Plan Review Program and comply with setbacks from oil and gas wells as determined by DOGGR. Recommendations by DOGGR regarding abandonment procedures shall be incorporated into the final development plans for the Project, if applicable.			
PH-2. In accordance with the provisions of the Los Angeles County Building Code, section 308, subdivision (d), all buildings and enclosed structures that would be constructed within the Newhall Ranch Specific Plan, located within 25 feet of oil or gas wells, shall be provided with methane gas protection systems. Buildings located within 25 feet and 200 feet of oil or gas wells shall, prior to the issuance of building permits by the County of Los Angeles, be evaluated in accordance with the current DOGGR rules and regulations.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: All known oil and gas wells shall be depicted building plans. Notes describing enclosed structure review requirements shall also be provided on building plans. The required review shall occur prior to the issuance of building permit. If necessary, proposed building plans shall depict proposed methane protection systems.	
PH-3. In accordance with the provisions of the Los Angeles County Building Code, section 308, subdivision (c), all building and structures located within 1,000 feet of a landfill containing decomposable material (in this case, Chiquita Canyon Landfill) shall be provided with a landfill gas migration protection and/or control system.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: Any buildings and/or structures located within 1,000 feet of the Chiquita Canyon Landfill shall be identified on proposed building plans. If necessary, building plans shall depict proposed landfill gas protection systems.	
PH-4. All final school locations are to comply with the California State Board of Education requirement that no schools be sited within 100 feet from the edge of the right-of-way of 100 to 110 kV lines; 150 feet from 220 to 230 kV lines; and 350 feet from 500 to 550 kV lines.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: All proposed school sites and transmission line rights-of-way shall be depicted on proposed tract maps.	
PH-5. All ongoing oil and natural gas operational sites adjacent or in proximity to residential, mixed use, commercial, business park, schools, and local and community parks shall be secured by fencing, and emergency access to these locations shall be provided in accordance with the California Code of Regulations, title 14, sections 1774 and 1778.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: Required fencing details and access routs shall be depicted on grading and building plans.	
PH-6. All activities associated with pipeline relocation, grading in the vicinity of gas mains, and development with the SCGC easements would be conducted in conformance with the requirements of SCGC. These requirements would be explicitly defined by SCGC prior to implementation of the Newhall Ranch Specific Plan.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: SCGC easements shall be depicted on applicable tract maps. Grading and building plan notes shall specify SCGC development requirements.	
PH-7. All development of the Newhall Ranch Specific Plan site and the VCC and Entrada planning areas shall be in compliance the provisions of Los Angeles County Code, title 21, chapter 21.24, for secondary evacuation access.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: All required access routes are to be depicted on proposed tract maps.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
PH-8. To reduce potentially hazardous conditions and minimize the impacts from handling potentially hazar dous materials, the owner shall include the following in its construction contract documents prior to the initiation of construction activities: • The Contractor(s) shall enforce stri ct on-site handling rules to keep construction and maintenance materials out of receiving waters and storm drains per the County's NPDES guidelines and as outlined in the Stormwater Pollution and Prevention Plan; and • The Contractor(s) shall prepare a Health and Safety Plan. The plan shall include measures to be taken in the event of an accidental spill. In addition, the Contractor(s) shall store all reserve fuel supplies only within the confines of a designated construction staging area, refuel equipment only within the designat ed construction staging area, and regularly inspect all construction equipment for leaks.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: The specified construction site requirements shall be included in all grading plan notes. The required Health and Safety Plan shall be prepared prior to the start of grading activities and shall be kept on file at applicable job sites.	
PH-9. The applicant shall prepare and implement a Spill Prevention Plan prior to all construction-related activities. The Spill Prevention Plan shall contain specific details on reporting requirements, cleanup processes, appropriate use and storag e of hazardous materials (such as the use of proper container types a nd storage requirements), and waste containment and disposal. The plan shall include specific measures and performance standards to ensure that appropriate measures are taken to adequately mitigate any releases. The plan will require approval from the Los Angeles County Fire Departme nt Health Hazardous Materials Division prior to the start of any Project-related construction.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: The required Spill Prevention Plan shall be prepared and approved prior to the start of grading activities and shall be kept on file at applicable job sites.	
PH-10. Prior to initiation of construction activities, the applicant shall prepare a Chemical Inventory for construction and maintenance of the Project. The Chemical Inventory shall be submitted to the Los Angeles County Fire Department Health Hazardous Materials Division for evaluation to determine whether a Hazardous Materials Business Plan is required. If a Hazardous Materials Business Plan is required, the plan shall address handling and potential releases of hazardous materials from the sites. It shall also include: (1) an inventory of all hazardous material and waste handled on site; (2) emerge ncy response plans; (3) procedures in the event of a reportable or threatened release of a hazardous material; and (4) safety procedure training for all employees in the event of a release or threatened release of a hazardous material.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation** : The required Chemical Inventory, and if required a Hazardous Materials Business Plan, shall be prepared and approved prior to the start of grading activities and shall be kept on file at applicable job sites.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
PH-11. In the event that previously unidentified, obvious, or suspected hazardous materials, contamination, debris, or other features or materials that could present a threat to human health or the environment are discovered during construction, construction activities shall cease immediately until the affected area is evaluated by a qualified professional. A remediation plan shall be developed in consultation with the appropriate regulatory authorities and the remediation identified shall be completed. Work shall not resume in the affected area until appropriate actions have been implemented in accordance with the remediation plan. The remediation action plan shall include the following: • Remediation goals and cleanup criteria that could include, but are not necessarily limited to, excavation and on-site treatment, excavation and off-site treatment, and/or removal of contaminated soil and/or groundwater; • A detailed description of the access points and haul-out routes for remedial activities; remediation methods and procedures; mitigation of dust; minimization or avoidance of disturbance to sensitive ecosystems; and verification soil sampling and analysis. Included in the discussion shall be information on disposal sites, transport and disposal methods, as well as recordkeeping methods for documenting remediation, regulatory compliance, and health and safety programs for on-site workers; and • Removal of oil development equipment and debris.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation**: Notes shall be included on all grading and building plans indicating the requirements of this mitigation measure, including on-site actions to be taken and the requirement to prepare a remediation plan if specified hazardous materials, contamination, debris, etc. be encountered during construction activities.	
PH-12. A Soil Management Plan for the residential development envelopes and recreational construction areas shall be developed and implemented, as appropriate. The objective of the Soil Management Plan is to provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities (*i.e.*, excavation and grading). The plan shall include practices that are consistent with the California Division of Occupational Safety and Health regulations, California Code of Regulations, title 8, as well as Certified Unified Program Agency remediation standards that are protective of the planned use. Appropriately trained professionals will be on site during preparation, grading, and related earthwork activities to monitor soil conditions encountered. In order to confirm the absence or presence of hazardous substances associated with former land use, a sampling strategy shall be implemented. The sampling strategy shall	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation** : A Soil Management Plan shall be prepared prior to the issuance of a grading permit. Notes shall be included on all grading plans indicating the requirements of this mitigation measure, including monitoring requirements and actions to be taken if impacted soil is encountered during construction activities.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
include procedures regarding logging/ sampling and laboratory analyses. The Soil Management Plan will outline guidelines for the following: • Identifying impacted soil; • Assessing impacted soil; • Soil excavation; • Impacted soil storage; • Verification sampling; and • Impacted soil characterization and disposal. In the event that potentially contam inated soils are encountered within the footprint of construction, soils will be tested and stockpiled. The Certified Unified Program Agency will determine whether further assessment is warranted. The Certified Unified Program Agency shall determine and oversee the handling and disposal of impacted soils.	LA County Dept. of Public Works and/or Dept. of Regional Planning	**Measure Implementation** : A Soil Management Plan shall be prepared prior to the issuance of a grading permit. Notes shall be included on all grading plans indicating the requirements of this mitigation measure, including monitoring requirements and actions to be taken if impacted soil is encountered during construction activities.	
PH-13. All potential buyers or tenants of property in the vicinity of SCGC transmission lines are to be ma de aware of the line's presence in order to assure that no permanent construction or grading occurs over, or within the vicinity of, the high-pressure gas mains.	LA County Dept. of Regional Planning	**Measure Implementation** : Project developer to demonstrate compliance with notification requirements prior to building occupancy.	
PH-14. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMAs, a Wildfire Fuel Modification plan shall be prepared in accordance with the fuel modification ordinance standards in effect at that time and shall be submitted for approval to the Los Angeles County Fire Department. The Wildfire Fuel Modi fication plan shall depict a fuel modification zone, the size of which shall be consistent with the Los Angeles County fuel modification ordi nance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance. The Wildfire Fuel Modification pl an shall include the following construction period requi rements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to the Los Angeles County Fire Department requirements. The fuel modification zone will not extend onto any spineflower preserve.	LA County Dept. of Regional Planning	**Measure Implementation** : Provide an approved Wildfire Fuel Modification plan prior to the recordation of an applicable tract map.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
4.18 Public Services			
PS-1. Prior to the issuance of building permits for commercial, office, and industrial development, and for single-family and multi-family residential development where a Capital Improvement/Construction Plan has been adopted, the applicant or designee shall pay the Los Angeles County Law Enforcement Facilities Mitigation Fee for north Los Angeles County.	LA County Dept. of Regional Planning LA County Dept. of Regional Planning	**Measure Implementation**: Payment of required fees prior to the issuance of a building permit.. **Measure Implementation**: Payment of required fees prior to the issuance of a building permit..	
4.19 Socioeconomics and Environmental Justice			
The RMDP/SCP EIS/EIR did not identify any significant socioeconomic or environmental justice impacts. Th erefore, no mitigation measures or monitoring requirements are necessary.	NA NA NA		
4.20 Solid Waste Services			
SWS-1. Prior to the issuance of grading permits, the project applicant shall prepare a Waste Management Plan pursuant to Los Angeles County Code, title 20, chapter 20.87, Construction and Demolition Debris Recycling. The Waste Management Plan shall include provisions for the recycling of a minimum of 50 percent of the construction and demolition debris, and the submittal of corresponding reports to the Los Angeles County Environmental Programs Division.	LA County Dept. of Regional Planning	**Measure Implementation** : Submit required Waste Management Plan prior to the issuance of applicable grading permits.	
8.0 Global Climate Change			
GCC-1. All residential buildings on the Project applicant's land holdings that are facilitated by appr oval of the proposed Project shall be designed to provide improved insulati on and ducting, low E glass, high efficiency air conditioning units, and ra diant barriers in attic spaces, as needed, or equivalent to ensure that all residential buildings operate at levels fifteen percent (15%) better than the standards p~~resently~~ required by the 2008 version of Title 24~~, (2005) applicable at the time the building permit applications are filed~~. Notwithstanding this measure, all residential buildings shall be designed to comply with the then-operative Title 24 standards applicable at the time building permit applications are filed. For example, if new standards are adopted that supersede the 2008 Title 24 standards, the residential bui ldings shall be designed to comply with those newer standards and, if necessary, exceed those standards by an increment that is equivalent to a 15 percent exceedance of the 2008 Title 24 standards.	LA County Dept. of Regional Planning	**Measure Implementation** : Comply with specified requirements prior to issuance of building permits.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
GCC-2. All commercial and public buildings on the Proposed applicant's land holdings that are facilitated by approval of the proposed Project shall be designed to provide improved insulation and ducting, low E glass, high efficiency HVAC equipment, and energy efficient lighting design with occupancy sensors or equivalent to ensure that all commercial and public buildings operate at levels fifteen percent (15%) better than the standards ~~presently~~ required by the 2008 version of Title 24. ~~(2005) applicable at the time the building permit applications are filed.~~ Notwithstanding this measure, all nonresidential buildings shall be designed to comply with the then-operative Title 24 standards applicable at the time building permit applications are filed. For example, if new standards are adopted that supersede the 2008 Title 24 standards, the nonresidential buildings shall be designed to comply with those newer standards and, if necessary, exceed those standards by an increment that is equivalent to a 15 percent exceedance of the 2008 Title 24 standards.	LA County Dept. of Regional Planning	**Measure Implementation** : Comply with specified requirements prior to issuance of building permits.	
GCC-3. The Project applicant or designee shall produce or cause to be produced ~~or purchase~~ renewable electricity, or secure greenhouse gas offsets or credits from a public agency (*e.g.*, CARB; SCAQMD) endorsed market, equivalent to the installation of one 2.0 ~~kilowatt~~ photovoltaic (*i.e.*, solar) power system no smaller than 2.0 kilowatts, when undertaking the design and construction of each single-family detached residential unit on the Project site. ~~on its land holdings that is facilitated by approval of the proposed Project; or, at the applicant's option, prior to commencing construction of any new phase of any individual subdivision, the applicant shall secure offsets or credits for carbon dioxide equivalents from either the Climate Action Reserve of the California Climate Action Registry, the Chicago Climate Exchange, or similar reserve/exchange; or, alternatively, at the applicant's option, the applicant may pay to the South Coast Air Quality Management District (District) the equivalent amount of funds that would be due to buy credits from the Climate Action Reserve, Chicago Climate Exchange, or similar reserve/exchange for greenhouse gas emission mitigation purposes. In any case, installation of individual photovoltaic systems shall be considered when undertaking the design and construction of residential buildings on the Project site.~~	LA County Dept. of Regional Planning	**Measure Implementation**: Demonstrate compliance with specified requirements prior to issuance of building permits.	
GCC-4. The Project applicant or designee shall produce or cause to be produced ~~or purchase~~ renewable electricity, or secure greenhouse gas offsets or credits from a public agency (*e.g.*, CARB; SCAQMD) endorsed market, equivalent to the installation of one 2.0 ~~kilowatt~~ photovoltaic system no smaller than 2.0 kilowatts, on each 1,600 square	LA County Dept. of Regional Planning	**Measure Implementation**: Demonstrate compliance with specified requirements prior to issuance of building permits.	

Mitigation Measure	Monitoring Agency	Mitigation Measure Monitoring Requirements	Approval/Acceptance Dates
feet of nonresidential roof area provided on the Project site. ; ~~or, at the applicant's option, prior to commencing construction of any new phase of any individual subdivision, the applicant shall secure offsets or credits for carbon dioxide equivalents from either the Climate Action Reserve of the California Climate Action Registry, the Chicago Climate Exchange, or similar reserve/exchange; or, alternatively, at the applicant's option, the applicant may pay to the South Coast Air Quality Management District (District) the equivalent amount of funds that would be due to buy credits from the Climate Action Reserve, Chicago Climate Exchange, or similar reserve/exchange for greenhouse gas emission mitigation purposes. In any case, installation of individual photovoltaic systems shall be considered when undertaking the design and construction of nonresidential buildings on the Project site~~.			
GCC-5. Consistent with the Governor's Million Solar Roofs Plan, the Project applicant or designee, acting as the seller of any single-family residence constructed as part of the development of at least 50 homes that are intended or offered for sale, shall offer a solar energy system option to all customers that enter negotiations to purchase a new production home constructed on land for which an application for a tentative subdivision map has been deemed complete ~~on or after January 1, 2011~~. The seller shall disclose the total installed cost of the solar energy system option, and the estimated cost savings.	LA County Dept. of Regional Planning	**Measure Implementation**: Demonstrate methods to be implemented to comply with specified requirements prior to issuance of building permits.	
GCC-6. The Project applicant or designee shall use solar water heating for each of the pools located at the recreation centers that would by facilitated by approval of the proposed Project (*i.e.*, the pools that would be located at the forty recreation centers within the Specific Plan area, and the two recreation centers within the Entrada planning area).	LA County Dept. of Regional Planning	**Measure Implementation**: Demonstrate compliance with specified requirements prior to issuance of building permits.	
GCC-7. The Project applicant or designee, in accordance with Los Angeles County requirements, will design and construct all municipal facilities (*i.e.*, fire stations) facilitated by approval of the proposed Project so as to achieve LEED silver certification.	LA County Dept. of Regional Planning	**Measure Implementation**: Demonstrate methods to be implemented to comply with specified requirements prior to issuance of building permits.	

Appendix 2B

Newhall Ranch RMDP/SCP, Mitigation Measures Not Applicable to the Project

California Department of Fish and Game [sic]
and Eyestone Environmental
April 2015

APPENDIX 2B

MITIGATION MEASURES ADOPTED FOR THE NEWHALL RANCH RESOURCE MANAGEMENT AND DEVELOPMENT PLAN AND SPINEFLOWER CONSERVATION PLAN THAT ARE NOT APPLICABLE TO THE ENTRADA SOUTH PROJECT

Mitigation Measure	Reason Not Applicable
AGRICULTURE	
MM RMDP/SCP AG-1: In order to minimize the premature conversion of agricultural lands and to track that conversion, prior to issuance of the first grading permit in the Project area where agricultural soils are designated as prime farmland, unique farmland, and/or farmland of statewide importance exist (Pub. Resources Code section 21060.1), the applicant or its designee shall prepare a phasing map to document the phased discontinuation of existing agricultural activities located within the Project area over the course of its development.	This measure is not applicable to the Project because the entire 6.2 acres of Prime Farmland on-site will be impacted at once due to installation of the identified debris basin; therefore, there is no need for phasing in that area of the Project Site.
BIOLOGICAL RESOURCES	
MM RMDP/SCP BIO-13: The mitigation program shall incorporate applicable principles in the interagency Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (60 FR 58605-58614) to the extent feasible and appropriate, particularly the guidance on administration and accounting. Nothing in the section 404 or section 2081 Permit or section 1605 agreement shall preclude the applicant from selling mitigation credits to other parties wishing to use those permits or that agreement for a project and/or maintenance activity included in the permits/agreement.	This measure does not apply to Entrada South, as there are no mitigation banks within the open space areas of RMDP/SCP project area.
MM RMDP/SCP BIO-14: Temporary impacts from construction activities in the riverbed shall be restricted to the following areas of disturbance: (1) an 85-foot-wide zone that extends into the river from the base of the rip-rap or gunite bank protection where it intercepts the river bottom; (2) 100 feet on either side of the outer edge of a	This measure does not apply to Entrada South, as no work would take place within the riverbed and the above-described construction activities would not occur as a part

Mitigation Measure	Reason Not Applicable
new bridge or bridge to be modified; (3) a 60-foot-wide corridor for utility lines; (4) 20-foot-wide temporary access ramps; and (5) 60-foot roadway width temporary construction haul routes. The locations of these temporary construction sites and the routes of all access roads shall be shown on maps submitted with the subnotification letter submitted to the Corps and CDFG for individual project approval. Any variation from these limits shall be submitted, with a justification for a variation for Corps and CDFG approval. The construction plans should indicate what type of vegetation, if any, would be temporarily disturbed or removed and the post-construction activities to facilitate revegetation of the temporarily impacted areas. The boundaries of the construction site and any temporary access roads within the riverbed shall be marked in the field with stakes and flagging. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside the work area and access roads.	of the Project.
MM RMDP/SCP BIO-18: Conduct focused surveys for California red-legged frogs. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for California red-legged frogs. The applicant shall contract with a qualified biologist to conduct focused surveys for California red-legged frogs. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. If present, the applicant shall implement measures required by the USFWS Biological Opinion for California redlegged frog that either supplement or supersede these measures. If present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG: (1) The applicant shall retain a qualified biologist with demonstrated expertise with California red-legged frogs to monitor all construction activities in potential red-legged frog habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of California red-legged frogs. (2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project	This measure does not apply to Entrada South because California red-legged frog has a very low potential to occur at or near the Project Site due to lack of suitable habitat and because numerous surveys in the Santa Clara River have resulted in no observations of this species.

Mitigation Measure	Reason Not Applicable
area the following information: a. A detailed description of the California red-legged frogs, including color photographs; b. The protection the California red-legged frog receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act; c. The protective measures being implemented to conserve the California red-legged frogs and other species during construction activities associated with the proposed Project; and d. A point of contact if California red-legged frogs are observed. (3) All trash that may attract predators of the California red-legged frogs will be removed from work sites or completely secured at the end of each work day. (4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the USFWS and the authorized biologist. The applicant shall provide information on the general location of construction activities within habitat of the California red-legged frogs and the actions taken to reduce impacts to this species. Because California red-legged frogs may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologist will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on California red-legged frogs. The goal of this effort is to reduce the level of mortality of California red-legged frogs during construction. (5) Work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas. (6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any California red-legged frogs from within the fenced area to suitable habitat outside of the fence. If California red-legged frogs are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG. (7) Fencing to exclude California red-legged frogs will be at least 24 inches in height. (8) The type of fencing must be approved by the authorized biologist and the	

Mitigation Measure	Reason Not Applicable
USFWS/CDFG. (9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of California redlegged frogs may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly. (10) If California red-legged frogs are found within an area that has been fenced to exclude California red-legged frogs, activities will cease until the authorized biologist moves the California red-legged frog(s). (11) If California red-legged frogs are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the California red-legged frogs. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS. (12) Any California red-legged frogs found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, access to deep perennial pools, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area. (13) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. (14) Staging areas for all construction activities will be located on previously disturbed upland areas, if possible, designated for this purpose. All staging areas will be fenced. (15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times.	
MM RMDP/SCP BIO-19: The 1,518-acre Salt Creek area shall be offered for dedication to the public pursuant to Condition 42 of the approved Specific Plan using a “rough step” land dedication approach. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1). The Salt Creek area includes approximately 629 acres of coastal scrub communities within both	This measure does not apply to Entrada South because the Project Site is located outside the Specific Plan area.

Mitigation Measure	Reason Not Applicable
Ventura and Los Angeles counties. This land dedication shall be managed in conjunction with the 4,205-acre High Country SMA (containing 1,314 acres of coastal scrub communities). a. To facilitate wildlife movement between the north side of SR-126 and the Salt Creek area, enhancements will be made to the existing agricultural undercrossing and to the agricultural land at the base of Salt Creek as discussed in BIO-59. A Wildlife Movement Enhancement Plan shall be submitted to the Corps and CDFG for approval prior to implementation. The plan shall include at the minimum the following: i. A portion of the agricultural field on the north side of SR-126 will be dedicated to wildlife movement. Trees and/or scrubs will be planted in the agricultural field to guide wildlife into the existing undercrossing. ii. On the south side of SR-126 two rows of trees/scrubs will be planted to guide wildlife to the Santa Clara River. iii. A wildlife corridor will be created through the agricultural fields at the base of Salt Creek Canyon.	
MM RMDP/SCP BIO-21: Supplemental restoration of coastal scrub shall be conducted as an adaptive management measure pursuant to BIO-20. Eight areas were identified in the Draft Newhall Ranch Mitigation Feasibility Report in the High Country SMA, Salt Creek area, and River Corridor SMA (Dudek 2007A) for coastal scrub restoration. In the event that coastal scrub restoration is required pursuant to BIO-20, the applicant shall develop a Coastal Scrub Restoration Plan, subject to the approval of CDFG. The plan shall specify, at a minimum, the following: (1) the location of mitigation sites to be selected from suitable mitigation land in the High Country and Salt Creek areas identified in the Feasibility Study; (2) a description of "target" vegetation (native shrubland) to include estimated cover and abundance of native shrubs; (3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as appropriate; (4) methods for the removal of non-native plants (e.g., mowing, weeding, raking, herbicide application, or burning); (5) the source of all plant propagules (e.g., seed, potted nursery stock, etc. collected from within five miles of the restoration site), the quantity and species of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; (6) a schedule and action plan to maintain and monitor the enhancement/restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to	This measure does not apply to Entrada South, as the Project will not require supplemental restoration of coastal scrub.

Mitigation Measure	Reason Not Applicable
erosion, trespass, or animal damage for a period no less than two years; (7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/ enhancement areas; and (8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful. Habitat restoration/enhancement will be judged successful when: (1) percent cover and species richness of native species reach 50% of cover and species richness at reference sites; and (2) the replacement vegetation has persisted at least one summer without irrigation. Annual monitoring reports will be prepared and submitted to CDFG and will be made available to the public to guide future mitigation planning. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; describe success and completion of those efforts and other pertinent site conditions (erosion, trespass, animal damage) in qualitative terms; and describe vegetation survival or establishment in quantitative terms.	
MM RMDP/SCP BIO-43: Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities that result in any disturbance to the banks or wetted channel, aquatic habitats within construction sites and access roads, as well as all aquatic habitats within 300 feet of construction sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps and CDFG shall be notified at least 14 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any construction work in the riverbed. If there is evidence that fish spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by USFWS. If surveys determine that gravid fish are present, that spawning has recently occurred, or that juvenile fish are present in the proposed construction areas, all activities within aquatic habitat will be suspended. Construction within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area.	This measure does not apply to Entrada South, as construction-related activities would not disturb banks or wetted channels that provide habitat for fish species at any time.
MM RMDP/SCP BIO-44: Temporary bridges, culvert crossings, or other feasible methods of providing access across the river shall be constructed outside of the winter season and not during periods when spawning is occurring. Prior to the construction of any temporary or permanent crossing of the Santa Clara River, the applicant shall develop a Stream Crossing and Diversion Plan. The plan shall include the following elements: the timing and methods for pre-construction aquatic species surveys; a	This measure does not apply to Entrada South, as no river crossings are proposed as part of the Project.

Mitigation Measure	Reason Not Applicable
detailed description of the diversion methods (e.g., berms shall be constructed of on-site alluvium materials of low silt content, inflatable dams, sand bags, or other approved materials); special-status species relocation; fish exclusion techniques, including the use of block netting and fish relocation; methods to maintain fish passage during construction; channel habitat enhancement, including the placement of vegetation, rocks, and boulders to produce riffle habitat; fish stranding surveys; and the techniques for the removal of crossings prior to winter storm flows. The Plan shall be submitted to the USFWS and CDFG for approval at least 30 days prior to implementation. If adult special-status fishes are present and spawning has not occurred, they shall be relocated prior to the diversion or crossing. Block nets of 1/8-inch woven mesh will be set upstream and downstream. On days with possible high temperature or low humidity (temperatures in excess of 80° F), work will be done in the early morning hours, as soon as sufficient light is available, to avoid exposing fishes to high temperatures and/or low humidity. If high temperatures are present, the fishes will be herded to downstream areas past the block net. Once the fishes have been excluded by herding, a USFWS staff member or his or her agents shall inspect the site for remaining or stranded fish. A USFWS staff member or his or her agents shall relocate the fish to suitable habitat outside the Project area (including those areas potentially subject to high turbidity). During the diversion/relocation of fishes, the USFWS or his or her agents shall be present at all times.	
MM RMDP/SCP BIO-45: **a. Stream diversion bypass channels:** Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/USFWS. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/ USFWS. The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/USFWS, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (i.e., boulders,	This measure does not apply to Entrada South, as no stream diversion bypass channels or dewatering are proposed as part of the Project.

Mitigation Measure	Reason Not Applicable
large logs, or other CDFG/USFWS-approved materials) placed in the channel at the point of each curve (i.e., on alternating sides of the channel). If emergent aquatic vegetation is present in the original channel, the applicant will transplant suitable vegetation into the diversion channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed construction areas. At the conclusion of the diversion, either at the commencement of the winter season, or the completion of construction, the applicant will coordinate with CDFG/USFWS to determine if the diversion should be left in place or the stream returned to the original channel. If CDFG/USFWS determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (i.e., while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (i.e., boulders, large logs, or other CDFG/USFWS-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place. **b. Dewatering:** Construction dewatering in close proximity to stream flow shall implement the following: – Assess local stream and groundwater conditions, including flow depths, groundwater elevations, and anticipated dewatering cone of influence (radius of draw down). – Assess surface water elevations upstream, adjacent to, and downstream of the extraction points, to assess any critical flow regimes susceptible to excessive draw down and therefore fish stranding issues. – Assess surface water elevations downstream of the discharge locations (if discharge is proposed to the flowing stream) to assess any flow regimes and overbank areas that may be susceptible to flooding and therefore fish stranding	

Mitigation Measure	Reason Not Applicable
at the cessation of discharge. Discharge locations shall also be assessed for potential channel bed erosion from dewatering discharge, and appropriate BMPs must be implemented to prevent excessive erosion or turbidity in the discharge. – The information above shall be summarized and provided in a plan approved by CDFG and Corps. – Fish shall be excluded from any artificial flowing channels from dewatering discharge. Methods to ensure separation may include, but are not limited to: block netting at the confluence; creation of a physical drop greater than four inches at the confluence; or maintaining a velocity range unsuitable for fish passage, such as a berm at the confluence with small diameter pipes for discharge.	
MM RMDP/SCP BIO-46: During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless USFWS personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and USFWS within 24 hours.	This measure does not apply to Entrada South, as the Project does not propose stream diversion or culvert installation activities.
MM RMDP/SCP BIO-47: Slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area to provide refuge for special-status fishes during construction. Where feasible and in consultation with CDFG and USFWS, the applicant shall enhance slow moving water habitats for each linear foot disturbed by hand-excavating shallow side channels and placing multiple sets of obstructions (e.g., boulders, large logs, or other CDFG- and USFWS-approved materials) in the channel.	This measure does not apply to Entrada South, as no work would take place within the riverbed, and no construction activities relating to river crossings or bridges would occur as a part of the Project.
MM RMDP/SCP BIO-48: Installation of bridges, culverts, or other structures shall not impair the movement of fish and aquatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert crossings shall include provisions for a low flow channel where velocities are less than two feet per second to allow fish passage.	This measure does not apply to Entrada South, because the Project does not propose any bridges, culverts or other structures that would impair the movement of fish and aquatic life.
MM RMDP/SCP BIO-51: Bridges over the Santa Clara River shall be designed to minimize impacts to natural areas and riparian resources from associated lighting and stormwater runoff. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bollard lights,	This measure does not apply to Entrada South, as the Project does not include construction of bridges in the vicinity of riparian resources or other natural areas. Additionally, MM ES 5.4-60 ensures that lighting shall be

Mitigation Measure	Reason Not Applicable
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.	directed away from natural areas.
MM RMDP/SCP BIO-55: a. As a supplement to BIO-1 through BIO-16, additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo will be provided for certain key habitat zones at higher ratios (identified as "key population areas" in Figure 4.5-86, Alternative 2 Impacts to Least Bell's Vireo Habitat). Southern willow scrub, southern cottonwood-willow riparian, arrow weed scrub, mulefat scrub, and Mexican elderberry scrub and woodland that provide nesting/foraging habitat for least Bell's vireo in "key population areas" shall be replaced or enhanced. All permanent loss to nesting/foraging habitat in key population areas shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or USFWS. Temporary habitat loss of foraging/nesting habitat in key population areas shall be mitigated at a 2:1 ratio. The requirements for replacing habitat by either creating new habitat or removing exotic species from existing habitat shall follow the procedures outlined in BIO-1 through BIO-16. To replace the lost functions of habitat located adjacent to the Santa Clara River due to noise impacts, all nesting/foraging habitat within the 60 dBA sound contour (associated with development site roadway improvements) shall be considered degraded. Nesting/foraging habitat within this area shall be mitigated at a ratio of 2:1. b. The loss of documented occupied nesting habitat for coastal California gnatcatcher shall be mitigated. If the coastal California gnatcatcher is identified nesting on site, the applicant will acquire or preserve nesting coastal California gnatcatcher habitat at a 3:1 ratio for impacts to documented occupied habitat, or by the ratio specified in BIO-2, whichever is greater. Mitigation acquisition shall occur at an agreed-upon location as approved by the USFWS upon consultation. The applicant shall enter into a binding legal agreement regarding the preservation of occupied habitat describing the terms of the acquisition, enhancement, and management of those lands.	This measure does not apply to Entrada South, as the Project would not cause impacts to primary constituent elements of least Bell's vireo habitat.
MM RMDP/SCP BIO-59: Road undercrossings will be built in accordance with accepted design criteria to allow the passage of mountain lions and mule deer. The applicant shall prepare a Wildlife Movement Corridor Plan that specifically addresses wildlife movement corridors at San Martinez Grande, Chiquito Canyon, and Castaic	This measure does not apply to Entrada South, as impacts to wildlife corridors would be less than significant, and the movement corridors at San Martinez Grande, Chiquito Canyon, and Castaic Creek all are west of the Project Site.

Mitigation Measure	Reason Not Applicable
Creek, which shall be monitored for one year prior to construction of the SR-126 widenings. The Plan shall address current movement that is occurring, the methods that will be implemented to provide for passage, including lighting, fencing, vegetation planting, the installation of bubblers to encourage wildlife usage, and the size of the passage. The applicant shall install motion cameras at these locations in consultation with CDFG and monitor these passages for a period of two years subsequent to constructing improvements. A report of the wildlife documented to utilize these crossings shall be provided to CDFG annually. In addition, the Salt Creek crossing west of the Project area will be enhanced prior to initiation of construction in Long Canyon (southern portion of the Homestead Village). This crossing will be monitored for one year at the initiation of RMDP development, for two years at the time the crossing is enhanced, and then for three years after Project build-out. Prior to the construction of adjacent developments, signs will be placed along the roads indicating potential wildlife crossings where mountain lions and mule deer are likely to cross.	
MM RMDP/SCP BIO-62: At least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO in fee and/or by conservation easement. These 1,900 acres of the Open Area will be left as natural vegetation. Dedication of open areas lands shall be reported annually to CDFG.	This measure does not apply to Entrada South, as the Project Site is located outside the Specific Plan area.
MM RMDP/SCP BIO-65: Pre-construction surveys for San Emigdio blue butterfly shall occur in all areas containing host plants in sufficient density to support this species. A qualified Lepidoptera biologist shall conduct focused surveys at a time of year and during weather conditions when the detection of eggs, larvae, or adults is possible. All occupied habitat shall be mapped and the locations provided to CDFG. Should the removal of quail brush or other documented host plants from occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas be required, the plants shall be removed when eggs and larvae are not present (i.e., mid-September to March). Removal of quail brush plants from the documented habitat in Potrero Canyon may only be conducted from April through early September if it is determined by a qualified biologist that eggs and/or larvae are not present on the plants to be removed.	This measure does not apply to Entrada South, as no direct impacts to San Emigdio blue butterfly host plant habitat are anticipated.
MM RMDP/SCP BIO-66: The removal of quail brush or other documented host plants from any occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas shall be replaced at a minimum of a 1.5:1 ratio. The replacement plants shall be planted contiguous to the existing quail brush plants associated with the San Emigdio blue butterfly habitat. The success of the replanting shall be monitored for survival and vigor consistent with survivorship requirements of Mitigation Measure BIO-6 and BIO-7.	This measure does not apply to Entrada South, as no direct impacts to San Emigdio blue butterfly host plant habitat are anticipated.

Mitigation Measure	Reason Not Applicable
MM RMDP/SCP BIO-69: The Newhall Ranch JPA will have overall responsibility for recreation within and conservation of the High Country. The Newhall Ranch JPA and NLMO shall develop and implement a conservation education and citizen awareness program for the High Country SMA informing the public of the special status resources present within the High Country SMA and providing information on common threats posed by the presence of people and pets to those resources. The NLMO shall install trailhead and trail signage indicating the High Country SMA is a biological conservation area and advising that people and their animals must stay on existing trails at all times and that violators may be cited. The NLMO shall provide quarterly maintenance patrols to remove litter and monitor trail expansion and fire hazards within the High Country SMA, funded by the JPA.	This measure does not apply to Entrada South, as the Project Site is located outside the Specific Plan area.
MM RMDP/SCP BIO-73: Permanent fencing shall be installed along all River Corridor SMA trails adjacent to the Santa Clara River, or other sensitive resources, in order to minimize impacts associated with increased human presence on protected vegetation communities and special-status plant and wildlife species. The fencing will be split rail to avoid inhibiting wildlife movement. Viewing platforms will be located in land covers currently mapped as agriculture, disturbed land, or developed land.	This measure does not apply to Entrada South, as the Project does not include trails along the Santa Clara River SMA/SEA (River Corridor SMA). However, the following mitigation measures that address fencing for open space have been included as part of the Project, as listed in **Section 5.4**, Biological Resources, of the Draft EIR: MM ES 5.4-22/RMDP/SCP BIO-27, MM ES 5.4-24/RMDP/SCP BIO-29, MM ES 5.4-26/RMDP/SCP BIO-31, MM ES 5.4-28/RMDP/SCP BIO-33, MM ES 5.4-31/RMDP/SCP BIO-36, MM ES 5.4-37/RMDP-SCP BIO-42, and MM ES 5.4-63.
MM RMDP/SCP BIO-74: To protect Middle Canyon Spring and to reduce potential direct impacts to any special-status species that may be located within the spring complex due to unrestricted access, the Project applicant or its designee shall avoid all construction-related activities within the Middle Canyon Spring complex and erect and maintain temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to and during all phases of construction within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris, or anything associated with construction activities. Any upslope runoff from construction areas	This measure does not apply to Entrada South, as Middle Canyon Spring is not located within the Project Site.

Mitigation Measure	Reason Not Applicable
will be directed away from the Middle Canyon Spring. Following the final phase of construction of any Newhall Ranch subdivision tract adjacent to Middle Canyon Spring, the Project applicant or its designee shall install and maintain permanent fencing along the subdivision tract bordering the spring. Permanent signage shall be installed on the fencing along the spring boundary to indicate that the fenced area is a biological preserve that contains protected species and habitat. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring. a. As described in BIO-51, the Commerce Center Drive Bridge will be designed to minimize secondary impacts associated with lighting and water quality impacts through the installation of indirect and downcast lighting, and routing of stormwater to water quality treatment facilities.	
MM RMDP/SCP BIO-75: Focused surveys for the undescribed species of everlasting (a special-status plant species) shall be conducted by a qualified botanist prior to the commencement of grading/construction activities wherever suitable habitat (primarily river terraces) could be affected by direct, indirect, or secondary construction impacts. The surveys shall be conducted no more than one year prior to commencement of construction activities within suitable habitat, and the surveys shall be conducted at a time of year when the plants can be located and identified. Should the species be documented within the Project boundary, avoidance measures shall be implemented to minimize impacts to individual plants wherever feasible. These measures shall include minor adjustments to the boundaries/location of haul routes and other Project features. If, due to Project design constraints, avoidance of all plants is not possible, then further measures, described in BIO-76, shall be implemented to salvage seeds and/or transplant individual plants. All seed collection and/or transplantation methods, as well as the location of the receptor site for seeds/plants (assumed to be within preserved open space areas of Newhall Ranch along the Santa Clara River), shall be coordinated with CDFG prior to impacting known occurrences of the undescribed everlasting.	This measure does not apply to Entrada South, as the undescribed species of everlasting has not been observed on the Project Site despite regular botanical surveys since 2002, which were most recently conducted in 2012.
MM RMDP/SCP BIO-76: For any individual project, or any phase of an individual project, to be located where undescribed everlasting plants may occur (i.e., the sites identified in this EIS/EIR and any new sites discovered by preconstruction surveys, per BIO-75, or other future field surveys), Newhall Land shall prepare and implement an Undescribed Everlasting Mitigation and Monitoring Plan prior to the issuance of grading permits.	This measure does not apply to Entrada South, as the undescribed species of everlasting has not been observed on site despite regular botanical surveys since 2002, which were most recently conducted in 2012.

Mitigation Measure	Reason Not Applicable
The Plan shall provide for replacement of individual plants to be removed at a minimum 1:1 ratio, within suitable habitat at a site where no future construction-related disturbance will occur. The plan shall specify the following: (1) the location of the mitigation site in protected/preserved areas within the Specific Plan site; (2) methods for harvesting seeds or salvaging and transplantation of individual plants to be impacted; (3) measures for propagating plants (from seed or cuttings) or transferring living specimens from the salvage site to the introduction site; (4) site preparation procedures for the mitigation site; (5) a schedule and action plan to maintain and monitor the mitigation area; (6) the list of criteria and performance standards by which to measure the success of the mitigation site (below); (7) measures to exclude unauthorized entry into the mitigation areas; and (8) contingency measures such as erosion control, replanting, or weeding to implement in the event that mitigation efforts are not successful. The performance standards for the Undescribed Everlasting Mitigation and Monitoring Plan shall be the following: a. Within four years after reintroducing the undescribed everlasting to the mitigation site, the extent of occupied acreage and the number of established, reproductive plants will be no smaller than at the site lost for project construction. b. Non-native species cover will be no more than 5% absolute cover through the term of the restoration. c. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana*), and any species listed on the California State Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site as of the date of completion approval.	
MM RMDP/SCP BIO-77: A Middle Canyon Spring Habitat Management Plan will be developed that details the measures to be implemented to maintain the populations of the spring snail (*Pyrgulopsis castaicensis* n. sp.) and Newhall sunflower species. The plan shall be subject to the approval of CDFG and implemented by Newhall Land prior to disturbance within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of Middle Canyon Spring. The plan shall include the following elements: (1) collection of data on existing site conditions; (2) construction monitoring program and a post development monitoring program; (3) threshold parameters that activate adaptive management measures across a series of potential future scenarios, including water quality and water quantity scenarios, including the potential use of infiltration wells, if these should become necessary to ensure water quantity; (4) measures to exclude unauthorized entry into the spring; and (5) contingency measures in the event that	This measure does not apply to Entrada South, as Middle Canyon Spring is not located within the Project Site.

Mitigation Measure	Reason Not Applicable
management efforts are not successful. Plan elements are further described below: Plan elements are further described below: <u>Pre-development data collection</u>: Upon approval of the proposed Project, data collection for Middle Canyon Spring and its biotic community will be initiated. Site assessments will be completed by biologists and, as needed, with surveyors, engineers, geologists, and hydrogeologists to collect the following data, subject to limitations on disturbances: (1) inventory of plant species within and adjacent to the spring; (2) percent native and non-native plant cover and percent bare ground within and adjacent to the spring using the relevé method, a visual estimation technique to classify and map large vegetation areas in a limited amount of time (see below); (3) structural description of vegetation communities within each relevé plot; (4) GPS mapping of all trees within core spring area and adjacent 100 feet; (5) GPS mapping of special-status sunflower; (6) census special-status sunflower stem numbers; (7) description of any disturbances to the spring area; (8) establishment of permanent photo points; (9) photo documentation of seasonal changes in the spring; (10) survey and mapping of hydrologic and topographic features in the area adjacent to the spring; (11) population data on the *Pyrgulopsis castaicensis* n. sp., including distribution, abundance, density, size classes and seasonal activity, and microhabitat descriptions; (12) invertebrates survey; (13) amphibian survey; (14) characterization of algal and microbial components; (15) survey of spring inlet and outlets for comparison to piezometer water elevations from monitoring points P-1MS, P-2MS, and P-8B; (16) flow rates of spring outlets at a frequency to record diurnal fluctuations; (17) approximate evapotranspiration rates of the vegetation community; (18) piezometer water elevation data from P-1MS, P-2MS, and P-8B collected at a frequency suitable to determine seasonal variations in groundwater elevations; (19) continuously recorded surface water temperature and depth profile at a spring monitoring location and piezometers P-1MS and P-2MS; (20) water quality/chemistry data in the spring and the three nearby piezometers (P-1MS, P-2MS, and P-8B) (dissolved oxygen [DO, spring only], salinity, pH and alkalinity, nitrates, sulfates, relevant cations and anions [bicarbonate, calcium, chloride, magnesium, nitrate as NO3, potassium, sodium], total dissolved solids [TDS], turbidity [spring only], and suspended solids [spring only]); (21) soil samples along the margin of the spring to determine soil classification types; and (22) as available, compilation of a record of historical photographs and aerial photographs of the spring and adjacent areas.	

Mitigation Measure	Reason Not Applicable
Vegetation data will be collected using a non-invasive monitoring method and analyzed in accordance with the California Native Plant Society (CNPS) Relevé Protocol (2004), which provides for a visual assessment of vegetation communities instead of the more intrusive point-intercept transect methods. This will ensure that collection of vegetation data will limit damage to the spring vegetation and limit the establishment of trails during monitoring visits. Additionally, for two years following approval of the proposed Project, the applicant, in consultation with CDFG, shall provide for the collection of seed from the Newhall sunflower species by a qualified research institution for long-term seed bank preservation or other conservation purposes. Further, to facilitate additional research of the species, applicant shall allow CDFG access to the spring complex for future conservation purposes. Prior to establishing the post-development long-term thresholds discussed below, hydrologic and biologic data will be evaluated, and any increase or decrease greater than 10% in monitoring parameters 2, 11 through 16, and 18 through 20, described above, will serve as an interim threshold and will trigger adaptive management measures, such as those described below. Should these thresholds be triggered, CDFG will be notified within 24 hours to determine what actions, if necessary, will be implemented. Biological data collection will contribute to the establishment of habitat criteria necessary for sustaining the *Pyrgulopsis castaicensis* n. sp. and the Newhall sunflower. <u>Construction monitoring program and data collection</u> Data collection described above will continue during construction near the spring complex (Commerce Center Drive Bridge and development of Middle Canyon (Mission Village planning area)). Monitors will be on site daily when work is conducted within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, and weekly during mass grading of Middle Canyon, to observe and report on construction activities. Monitors will ensure that appropriate avoidance and minimization measures are implemented, such as the installation and maintenance of perimeter construction fencing and storm water controls, silt fences, and sand bags. During any period where dewatering occurs within 100 feet of flowing water in Middle Canyon Creek and/or 200 feet of the spring complex, biological and hydrologic parameters will be monitored daily. No dewatering activities shall occur in the spring complex. Discharge of any dewatering waters, nuisance irrigation flows, water quality basin, subdrain, backdrain, or toe drain flows shall be directed away from the spring.	

Mitigation Measure	Reason Not Applicable
Post-development data collection Biological and hydrologic monitoring will continue post-development. For the first two years after build-out of Middle Canyon (Mission Village), post-construction monitoring will be as frequent as during the pre-construction period. After the two-year period, data collected and the frequency of monitoring may be adjusted, in consultation with CDFG. The post-development monitoring program will continue to collect data on trends and changes in the populations of the *Pyrgulopsis castaicensis* n. sp. and Newhall sunflower and document any shift in spring habitat composition or any changes in conditions that would potentially impact the spring system, as detailed above. Analysis and comparison of collected data will establish long-term thresholds. These thresholds will serve to trigger adaptive management measures during the post-development period. Adaptive Management As dictated by the thresholds discussed above, the following measures may be implemented after consultation with CDFG in the event a threshold is exceeded. These actions may include, but are not limited to: (1) the addition of supplemental water via an existing deep Saugus well in Middle Canyon; (2) removal of infiltration water by diverting flow from upstream water quality features; (3) implementing invasive species control; and (4) implementing additional controls to prevent unauthorized access to the spring complex. Monitoring Report Annual monitoring reports will be prepared to summarize the status of the *Pyrgulopsis castaicensis* n. sp. and Newhall sunflower and hydrology within Middle Canyon Spring. These reports will be used to evaluate the significance of impacts and the efficacy of mitigation measures. Reports will include results of biological surveys, flow data, groundwater modeling results, water quality data, mapping of the spring features and biota, photo-documentation from permanent photo points, analysis of field and lab data, conclusions based on ongoing monitoring efforts, and recommendations for future management actions. Annual monitoring reports will be submitted to CDFG and Corps.	
MM RMDP/SCP BIO-79: The status of the Potrero Canyon San Emigdio blue butterfly colony shall be monitored by a qualified biologist for a period of five years after Potrero Canyon Road construction completion/operation commencement to evaluate whether the operation of the road may be contributing to a population decline in the colony.	This measure does not apply to Entrada South, as the Potrero Canyon San Emigdio blue butterfly colony is not located within the Project Site.

Mitigation Measure	Reason Not Applicable
Should it be determined that a population decline is occurring, habitat creation for the San Emigdio blue butterfly shall be implemented in suitable locations contiguous to the habitat but away from the road. A habitat creation plan will be prepared that details the location and methods for creating habitat, that specifies success criteria, and that describes measures that will be implemented in the event that the habitat creation does not stabilize the San Emigdio blue butterfly population.	
MM RMDP/SCP BIO-81: The installation of new, or relocation of existing, utility poles and phone and cell towers shall be coordinated with CDFG where located in the High Country SMA and Salt Creek area. The applicant or SCE shall install utility poles, phone, and cell towers in conformance with APLIC standards for collision-reducing techniques as outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).	This measure does not apply to Entrada South, as the High Country SMA/SEA and Salt Creek area are not located within or near the Project Site. Moreover, the Project Site is located outside the Specific Plan area.
MM RMDP/SCP BIO-82: a. All surfaces on new antennae and phone/utility towers shall be designed and operated with anti perching devices in conformance with APLIC standards to deter California condors and other raptors from perching. During construction the area shall be kept clean of debris, such as cable, trash, and construction materials. The applicant shall collect all microtrash and litter (anything shiny, such as broken glass), vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash: what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash. b. The applicant shall retain a qualified biologist with knowledge of California condors to monitor construction activities within the Project area. The resumes of the proposed biologist(s) will be provided to CDFG for concurrence. This biologist(s) will be referred to as the authorized biologist hereafter. During clearing and grubbing of construction areas, the qualified biologist shall be present at all times. During mass grading, construction sites shall be monitored on a daily basis. The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. If condors are observed landing in the Project area, the applicant shall avoid further construction within 500 feet of the sighting until the animals have left the area, or as otherwise authorized by CDFG and USFWS. All condor sightings in the Project area will be reported to CDFG and USFWS within 24 hours of the sighting. Should condors be found roosting within 0.5 mile of the construction area, no construction activity shall occur between one	No new utility poles or towers are proposed as part of the Project. In addition, this measure does not apply to Entrada South, as California condors have not been recorded on or flying over the Project Site, and potential Project impacts to California condors are considered less than significant.

Mitigation Measure	Reason Not Applicable
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. c. To further protect California condor potentially foraging in the Project area over the long term from negative interactions with humans and/or artificial structures, the applicant or the JPA or the NLMO shall remove dead cattle that are found or reported within 1,000 feet of a residential or commercial development boundary. Dead cattle shall be relocated to a predetermined location within the High Country SMA or Salt Creek area. The locations where carcasses shall be placed shall be a minimum of 1,000 feet from a development area boundary. Appropriate locations for transfer of carcasses include open grasslands and oak/grassland areas where condors can readily detect carcasses and easily land and take off without encountering physical obstacles such as powerlines and other utility structures. The proposed locations would be selected and approved by the CDFG and USFWS. Pursuant to this measure, a telephone number for reporting dead cattle shall be provided and actively maintained. Any cattle carcasses transferred to the relocation areas shall be reported to the USFWS Condor group.	
MM RMDP/SCP BIO-83: Thirty days prior to construction activities, a qualified biologist shall conduct a preconstruction survey for ringtail. The survey area shall include suitable riparian and woodland habitat (southern coast live oak riparian forest, southern cottonwood–willow riparian forest, southern willow scrub, coast live oak woodland, valley oak woodland, and mixed oak woodland) within the construction disturbance zone and a 300 foot buffer around the construction site. Should the ringtail be observed in the breeding and rearing period of February 1 through August 31, no construction related activities shall occur within 300 feet of the occupied area for the period of February 1 through August 31 or until the ringtail has been determined by a qualified biologist (in consultation with CDFG) to no longer occupy areas within 300 feet of the construction zone and/or that construction activities would not adversely affect the successful rearing of young. If the ringtail is observed within the construction disturbance zone or in the 300 foot buffer around the construction site in the nonbreeding/rearing period of September 1 through January 31, and avoidance is not possible, denning ringtail shall be safely evicted under the direction of a qualified biologist (as determined by a Memorandum of Understanding with CDFG). All activities that involve the ringtail shall be documented and reported to CDFG.	This measure does not apply to Entrada South, as this species has not been detected on the Project Site. In addition, this species is not expected to use or reside at the Project Site due to the lack of suitable habitat and its location in an area that is proximate to development and human activity. Also, ringtail was not detected in the Project vicinity during surveys in 2004, and has never been detected on the Project site, despite numerous studies performed along the Santa Clara River and its tributaries.

Mitigation Measure	Reason Not Applicable
MM RMDP/SCP BIO-84: Bridge and culvert designs, where practicable, shall provide roosting habitat for bats. A qualified biologist shall work with the Project engineer in identifying and incorporating structures into the design that provide suitable roosting habitat for bat species occurring in the Project area. The final design of the roosting structures would be chosen in consultation with CDFG.	This measure does not apply to Entrada South, as potential Project impacts to roosting bats are considered less than significant. Further, the Project does not include any bridges or culvert designs suitable for bat roosting.
MM RMDP/SCP BIO-86: Requires focused surveys for the spring snail (*Pyrgulopsis castaicensis* n. sp.) by a qualified biologist prior to the commencement of grading/construction activities in any drainage area supporting perennial flow. Any individuals of the *Pyrgulopsis castaicensis* n. sp. found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If *Pyrgulopsis castaicensis* n. sp. are discovered during aquatic and semi-aquatic pre-construction surveys in any other perennial flowing water, the applicant shall consult with CDFG prior to initiating disturbance of the area. A report documenting the number of *Pyrgulopsis castaicensis* n. sp. 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.	This measure does not apply to Entrada South, as the Project would impact no springs or drainage areas supporting perennial flow.
MM RMDP/SCP BIO-89: Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 300 feet of construction sites and access roads shall be surveyed at the appropriate season for two-striped garter snake and south coast garter snake. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and September 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. If located, the species will be relocated to suitable pre-approved locations identified in the two-striped garter snake and/or south coast garter snake Relocation Plan. The applicant shall develop a Plan to address the relocation of two-striped garter snake and south coast garter snake. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for each species, identify the locations where more intensive efforts should be conducted, identify the habitat and conditions in the proposed relocation site(s), identify the methods that would be utilized for trapping and relocating the individual species, and provide for the documentation/recordation of the species and number of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing	This measure does not apply to Entrada South, as two-striped garter snake and south coast garter snake are not expected to occur on the Project Site, due to the lack of suitable habitat.

Mitigation Measure	Reason Not Applicable
activities, within potentially occupied habitat. The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of two-striped garter snake and/or south coast garter snake. Clearance surveys for garter snakes shall be conducted within 200 feet of potential habitat by the authorized biologist prior to the initiation of construction each day. The resume of the proposed biologists will be provided to CDFG for approval prior to conducting the surveys.	
CULTURAL	
MM RMDP/SCP CR-1a: The CA-LAN-2233 archaeological site, including a 100-foot buffer, shall be incorporated into the proposed Project design as a park area. To protect the archaeological resources from impacts associated with park development, the site shall be preserved by placing water permeable netting and two feet of sterile fill material over the area. No excavation of the site shall occur prior to the placement of the fill soil. If avoidance of the site and buffer is not feasible, Mitigation Measure CR-2 shall apply. The applicant shall include this mitigation measure as a note on a separate information sheet to be recorded with the final map. The location of the archaeological site shall not be identified on the informational sheet to protect the site from vandalism.	This measure is not applicable to Entrada South because CA-LAN-2233 is not within the boundaries of the Project Site; therefore, no significant impacts will occur to this archaeological site with implementation of Entrada South.
MM RMDP/SCP CR-1b: The CA-LAN-2133 archaeological site, including a 100-foot buffer, shall be incorporated into the proposed Project design as “Open Area.” To the extent possible, proposed road construction activities shall avoid the resource site and buffer area. If avoidance of the site and buffer is not feasible, Mitigation Measure CR-2 shall apply. The applicant shall include this mitigation measure as a note on a separate information sheet to be recorded with the final map. The location of the archaeological site shall not be identified on the informational sheet to protect the site from vandalism.	This measure is not applicable to Entrada South because CA-LAN-2133 is not within the boundaries of the Project Site; therefore, no significant impacts will occur to this archaeological site with implementation of Entrada South.
MM RMDP/SCP CR-2: In the event that any portion of archaeological sites CA-LAN-2133 and -2233 cannot be avoided by planned construction, a Phase III data recovery mitigation program consistent with federal, state, and county guidelines and funded by the applicant will be conducted. This will include consultation with the Tataviam community pursuant to the requirements of the Tataviam Agreement; hand excavation of a statistically valid sample of the impacted site area by qualified professional archaeologists; and processing, analysis, and curation of the recovered artifact assemblage.	This measure is not applicable to Entrada South because CA-LAN-2133 and CA-LAN-2233 are not within the boundaries of the Project Site; therefore, no significant impacts will occur to these archaeological sites with implementation of Entrada South.

Mitigation Measure	Reason Not Applicable
MM RMDP/SCP PR-4: Because fossils were discovered during the course of the 1994 field survey, pre-grading salvage is necessary in localities 13, 13A, 14, and 23, as presented in the 1994 Paleontological Technical Report prepared by RMW. This report provides specific details pertaining to the existing conditions as they relate to paleontological resources of the Specific Plan portion of the RMDP and was presented in the Newhall Ranch Specific Plan Program EIR, and is available for public review at the Los Angeles County Department of Regional Planning, 320 W. Temple Street, Los Angeles, California, 90012. These locations represent significant fossil discoveries. A minimum of 2,000 pounds of rock should be collected at each site, stockpiled, and screen washed before grading begins at these locations. The representative rock samples shall be analyzed by a qualified paleontologist for data collection purposes. Based on the results of initial evaluations, the number of collection samples in subsequent grading phases may be increased or decreased as deemed appropriate by the Project paleontologist.	This measure is not applicable to Entrada South because localities 13, 13A, 14, and 23 are not within the boundaries of the Project Site; therefore, no significant impacts will occur to these paleontological sites with implementation of the Entrada South Project.
HAZARDS	
MM RMDP/SCP PH-3: In accordance with the provisions of the Los Angeles County Building Code, section 308, subdivision (c), all building and structures located within 1,000 feet of a landfill containing decomposable material (in this case, Chiquita Canyon Landfill) shall be provided with a landfill gas migration protection and/or control system.	This measure is not applicable to Entrada South because the Project Site is not located within 1,000 feet of a landfill containing decomposable material. (Also note that rather than Section 308, Subdivision (c) of the Los Angeles County Building Code, this mitigation measure should refer to Section 110.3 to reflect current County Building Code requirements.)
MM RMDP/SCP PH-14: At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMAs, a Wildfire Fuel Modification plan shall be prepared in accordance with the fuel modification ordinance standards in effect at that time and shall be submitted for approval to the Los Angeles County Fire Department. The Wildfire Fuel Modification plan shall depict a fuel modification zone, the size of which shall be consistent with the Los Angeles County fuel modification ordinance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance. The Wildfire Fuel Modification plan shall include the following construction period requirements: (a) a fire watch during welding operations; (b) spark arresters on all equipment or vehicles operating in a high fire hazard area; (c) designated smoking and non-smoking areas; and (d) water availability pursuant to the Los Angeles County Fire Department requirements. The	This measure is not applicable to Entrada South because the Project Site is not located adjacent to designated Open Area or the High Country Special Management Areas.

Mitigation Measure	Reason Not Applicable
fuel modification zone will not extend onto any spineflower preserve.	
HYDROLOGY	
MM ES 5.9-2/RMDP/SCP HY-2: The design of flood protection facilities for the Santa Clara River shall be based on the following: (b) Soft bottom waterways with levees; and (c) Protective levees and additional facilities, such as drop structures or stabilizers, as required, using DPW design criteria.	This measure, specifically subparts (b) and (c), does not apply because the Project does not include development of flood protection facilities within the riverbed and/or along the banks of the Santa Clara River. Subpart (a) is applicable to the Project and is included in Section 5.9, Hydrology and Water Quality—Hydrology, of the Draft EIR.
MM RMDP/SCP HY-3: Flood control within the Santa Clara River portion of the Newhall Ranch Specific Plan boundaries shall conform to the following requirements, as stated in the Conceptual Backbone Drainage Plan of the Specific Plan: (a) The flood corridor will allow for the passage of the Los Angeles County capital flood discharge without the permanent removal of natural River vegetation (except at bridge crossings); (b) The banks of the River generally will be established outside of the "waters of the United States," as defined by federal laws and regulations and determined by the delineation for the Santa Clara River completed by the Corps in August 1993; (c) Where the Corps delineation width is insufficient to contain the capital flood flow, the flood corridor will be widened by an amount sufficient to carry the capital flood flow without the necessity of permanently removing vegetation or significantly increasing velocity; and (d) Soil cement will occur only where necessary to protect against erosion adjacent to the proposed development. Where existing bluffs are determined to be stable and there is no adjacent proposed development, no bank protection will be built.	This measure does not apply because the Project does not include development of flood protection facilities within the riverbed and/or along the banks of the Santa Clara River.
MM RMDP/SCP GRR-2: Where practical in River and tributary drainages, bridge crossings shall minimize the number and size of piers and/or columns to minimize localized impacts to River and/or tributary geomorphology and riparian resources.	This measure does not apply to Entrada South because the Project does not include bridge crossings or development across the Santa Clara River or tributary drainages.
MM RMDP/SCP GRR-7: A Geomorphology Monitoring and Management Plan (Plan) will be prepared to ensure that the modified/re-engineered drainages along the major tributaries (Long, Lion, Potrero, Chiquito, and San Martinez Grande Canyons) comply with the mitigation objectives and design goals outlined in the Newhall Ranch Tributary Channel Design Guidelines (PWA 2008). Specifically, the Plan shall include the	This measure does not apply to Entrada South because the Project does not include modified/re-engineered drainages along the major tributaries (Long, Lion, Potrero, Chiquito, and San Martinez Grande Canyons).

Mitigation Measure	Reason Not Applicable
measures to be implemented to ensure the integrity of the structural elements and a state of "constrained dynamic equilibrium. " The Plan shall specify the following: (1) a framework to collect baseline data to characterize conditions immediately after construction; (2) a post-development monitoring program; (3) a framework to develop erosion and sedimentation threshold parameters and performance standards that activate adaptive management measures across a series of potential future scenarios; and, (4) contingency plans and appropriate remedial measures in the event that management efforts are not successful. The Plan shall be subject to final approval by the U.S. Army Corps of Engineers, CDFG, and DPW and will include (but will not be limited to) the following: 1. Immediately after construction the following activities shall be carried out: • An as-built survey shall be conducted for the completed channels to include a full longitudinal profile, cross-sections, and all in-channel structures. • The channel floodplain and valley toe shall be mapped into three classes of channel migration zone: "green zones" where channel migration is permissible, "yellow zones" which should trigger site inspections by a qualified engineer or geomorphologist leading to possible stabilization actions, and "red zones" which should trigger immediate repair and stabilization efforts. 2. In years 1, 3, 5, 10, and 20 following construction and after a flow event exceeding the 10-year recurrence interval, the following activities shall be carried out: • A re-survey of the channel longitudinal profile and cross-sections. The longitudinal profile shall include a point on the thalweg every 50 feet where there are no visible steps or gradient changes in the channel profile, with additional points at any gradient changes. The longitudinal profile shall be surveyed in more detail through in-channel structures such as step-pools, with particular attention to the scour pool geometry. • A visual inspection of each step-pool structure shall be performed. The inspection shall look for evidence of soil piping or washing out between rocks, movement of rock out of position (e.g. into the scour pool), presence of visible geotextile or cutoff wall materials, evidence for outflanking of the structure, exposure of the base of the toe rock. • The longitudinal profile shall be compared to the as-built profile and the as-built step-pool structures, so that scour relative to the depth of the rock armor can be noted. • The low flow channel configuration shall be compared with the channel migration	

Mitigation Measure	Reason Not Applicable
zones. 3. The monitoring data will be evaluated to determine whether remedial actions or more detailed studies are required. The criteria used to trigger more detailed investigations or maintenance/remedial actions will include (but will not be limited to) the following: • If the low-flow channel migrates into the “yellow zone”, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine the probability of further migration into a “red zone”. If channel migration towards a “red zone” is occurring at a rate less than 3 feet per year, then this would trigger more frequent site inspections. These inspections shall include annual inspections and inspections after every large flow event (2-year recurrence interval flow or greater) until the channel migration ceases or the channel migrates away from the “red zone”. If the rate of migration towards a “red zone” exceeds 3 feet per year or is within 10-feet of a “red zone”, then remedial actions will be implemented to stabilize the channel and restore channel functionality to comply with the basis of design criteria. • If channel erosion exposes the toe protection of the step-pools, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to and develop a remedial plan to stabilize the channel and structure (e.g. extend toe protection deeper, or use grade control downstream to restore the channel bed elevation at the step-pool). • Following review and approval of the plan, the remedial actions will be implemented. • If channel erosion results in a decrease in the channel elevation of 1-foot or greater over a length of more than 50 feet or forms “knickpoints,” then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine whether the erosion/channel incision is likely to migrate and threaten the stability of project structures. If the results of the investigation indicate that the stability of the structures is in jeopardy, then a remedial plan will be developed to stabilize the channel and structure (e.g., keying in additional boulder ramps to the channel bed). Following review and approval of the plan, the remedial actions will be implemented. • If channel aggradation occurs such that step-pool structures are buried by sediment and/or the low-flow channel is no longer well-defined, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine whether the aggradational trend is short-term or long-term. For the	

Mitigation Measure	Reason Not Applicable
purposes of this monitoring program, "short term" means that the structure was not buried in the previous monitoring survey and "long term" means that the structure was buried during the previous monitoring survey. If aggradation appears to be short-term, then a pilot channel shall be cut through the original step-pool alignment to ensure that subsequent erosive flows do not flank the step-pools and jeopardize the channel stability. The pilot channel shall have the same dimensions as the original design channel. If aggradation appears to be long-term and the aggradation does not threaten the stability of the channel, then the channel shall be allowed to form itself (no sediment removal shall be carried out). However, if the aggradation appears to be long-term and potentially threatens the stability of the channel, then a remedial plan will be developed to stabilize the channel. Following review and approval of the plan, the remedial actions will be implemented. • After all flood events exceeding the 5-year recurrence interval flow, then a qualified geomorphologist or civil engineer shall conduct an inspection of the channel to evaluate for signs of erosion, "knickpoints," flanking of structures, and piping or erosion around the project structures. If the results of the inspection indicate evidence of channel instability, then a more detailed site investigation shall be carried out to determine whether corrective action is required. In addition to the measures identified above, the Plan shall describe the potential remedial techniques to prevent, mitigate, abate, or control undesirable geomorphic response. These measures will include (but will not be limited to) the following: 1. Repair, maintenance or replacement of creek structures and development improvements. 2. Stabilization (either partial or total) of eroded areas or failures of the creek slopes by removal and replacement with appropriate materials. 3. Construction of erosion control measures that, where feasible, will consist of bio-engineering techniques. 4. Placement of subsurface drainage devices (e.g., underdrains, or horizontal drilled drains). 5. Slope correction (e.g., gradient change, slope trimming or contouring). 6. Construction of additional surface ditches and/or ponds, sediment traps, or backfill of eroded channels. All monitoring reports shall be submitted to the U.S. Army Corps of Engineers, CDFG,	

Mitigation Measure	Reason Not Applicable
LA DPW, and/or other designated entities. Prior to implementing any remedial actions, applicable approvals and permits will be obtained from the U.S. Army Corps of Engineers, CDFG, and LA DPW. Following construction, the applicant will maintain responsibility for implementation of the Plan and will be responsible for all monitoring and necessary maintenance/remedial actions until transfer of the maintenance and monitoring responsibilities to the LA DPW or other designated entity.	
MM RMDP/SCP GRR-8: Mitigation Measure GRR-8 requires the implementation of in channel grade control structures similar to those proposed for Alternatives 2-6, and Mitigation Measure GRR-8 is required only for Alternative 7. Grade control structures shall be installed to reduce erosion-related impacts to a less-than-significant level. Similar to Alternatives 2-6, grade control structures provided for Alternative 7 shall implement the following design criteria: a. Creek bed grade control structures at approximately 200 to 400 foot spacing along the drainage corridor will be included. b. These grade control structures will designed to be located at points along the channel where proposed Project grading impacts already will be disturbing the channel bed and banks, wherever possible. c. The grade control structures will be constructed with soil cement, riprap or other grade stabilization methods acceptable to DPW. d. The grade control structures will be at grade or below the existing grade and invert of the channel bed. e. The grade control structures will be designed to function as a drop structure in the event the channel bed slope flattens over time.	This measure is not applicable to Entrada South because Alternative 7 was rejected by CDFW and the Corps.
NOISE	
MM RMDP/SCP NOI-1: Pile driving vibration due to the development of the Commerce Center Drive bridge shall be reduced by: • Identifying all uses in the vicinity that may be adversely affected by the vibrations, including Travel Village, residences built in earlier phases of Mission Village and Landmark Village, and non-residential land uses that may use vibration-sensitive etc.; and • Installing seismographs at the aforementioned sensitive locations to ensure that Section 12.08.560 of the County's Noise Ordinance is not exceeded, and/or that the	This measure does not apply because the Project does not include development of the Commerce Center Drive bridge.

Mitigation Measure	Reason Not Applicable
pile driving would not cause structural damage or adversely affect vibration-sensitive equipment; and • Adjusting vibration amplitudes of the pile driving on the conditions of the affected structures, the sensitivity of equipment, and/or human tolerance; and/or • To the extent feasible, the Project developer should utilize cast-indrilled-hole (CIDH) piles in lieu of pile driving.	
TRAFFIC	
MM RMDP/SCP TR-1: The Project applicant shall design and construct Magic Mountain Parkway west of Westridge Parkway in a manner that increases the planned six-lane augmented roadway to an eight-lane roadway. (This mitigation measure is applicable to Alternative 6 only.)	This measure is not applicable to the Project because Alternative 6 was not adopted by CDFW or the Corps.
MM RMDP/SCP TR-2: The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane roadway. (This mitigation measure is applicable to Alternative 7 only.)	This measure is not applicable to the Project because Alternative 7 was not adopted by CDFW or the Corps.
MM RMDP/SCP TR-3: The Project applicant shall contribute its fair-share of the costs to add additional capacity to Magic Mountain Parkway west of The Old Road by increasing the planned eight-lane augmented roadway to a 10-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	This measure is not applicable to the Project because Alternative 6 was not adopted by CDFW or the Corps.
MM RMDP/SCP TR-4: The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Rye Canyon Road by increasing the planned six-lane roadway to a six-lane augmented roadway. (This mitigation measure is applicable to Alternatives 6 and 7 only.)	This measure is not applicable to the Project because Alternatives 6 and 7 were not adopted by CDFW or the Corps.
MM RMDP/SCP TR-6: The Project applicant shall contribute its fair-share of the costs to add additional capacity to The Old Road north of Magic Mountain Parkway by increasing the planned six-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	This measure is not applicable to the Project because Alternative 6 was not adopted by CDFW or the Corps.
MM RMDP/SCP TR-8: The Project applicant shall contribute its fair-share of the costs to add additional capacity to Via Princessa east of Santa Clarita Road by increasing the planned six-lane roadway to a six-lane roadway. (This mitigation measure is applicable to Alternatives 2, 3, 4 and 5 only.)	This measure is not applicable to the Project since the Project would not add any traffic to the future roadway Via Princessa, now called Santa Clarita Parkway.

Mitigation Measure	Reason Not Applicable
MM RMDP/SCP TR-9: The Project applicant shall contribute its fair-share of the costs to add additional capacity to McBean Parkway south of Avenue Scott by increasing the planned eight-lane roadway to an eight-lane augmented roadway. (This mitigation measure is applicable to Alternative 6 only.)	This measure is not applicable to the Project because Alternative 6 was not adopted by CDFW or the Corps.

List of Acronyms:

CDFA California Department of Food and Agriculture
CDFG California Department of Fish and Game (now known as California Department of Fish and Wildlife)
DPW Department of Public Works
EIR Environmental Impact Report
EIS Environmental Impact Statement
JPA Joint Exercise of Powers Agreement
NLMO Natural Lands Management Organization
RMDP Resource Management and Development Plan
SCE Southern California Edison
SCP Spineflower Conservation Plan
SMA Special Management Area
USFWS United States Fish and Wildlife Service

Source: Eyestone Environmental and Dudek, 2015.

Appendix 2C

Biological Opinion for the Newhall Ranch RMDP

United States Department of the Interior, Fish and Wildlife Service

June 6, 2011

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
81440-2009-f-0397

June 6, 2011

Aaron O. Allen, Chief
Regulatory Division
U.S. Army Corps of Engineers
2151 Alessandro Drive, Suite 110
Ventura, California 93001

Subject: Biological Opinion for the Newhall Ranch Resource Management and Development Plan, Santa Clarita, Los Angeles County, California (File Number 2003-01264-AOA) (8-8-09-F-44)

Dear Dr. Allen:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the U.S. Army Corps of Engineers' (Corps) proposed authorization of Newhall Land and Farming (Newhall) to permanently impact approximately 92.3 acres of Waters of the U.S. for the construction of roads, flood control structures, and associated infrastructure for the Newhall Ranch Resource Management and Development Plan (RMDP) in the Santa Clara River and several other tributaries near Santa Clarita, Los Angeles County. At issue are the effects of this action on the federally endangered least Bell's vireo (*Vireo bellii pusillus*) and its critical habitat, southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), arroyo toad (*Anaxyrus californicus*) and its critical habitat, and unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), and the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq*.). Your June 10, 2009, request for the initiation of formal consultation was received on June 11, 2009.

You have determined that the California red-legged frog may be adversely affected as a result of habitat loss and RMDP activities. No documented occurrences of California red-legged frog have been recorded within the RMDP area, despite numerous surveys for special status aquatic species conducted during a period of time from 1999 to 2010. Given the intensity of the aquatic survey efforts for the proposed project, California red-legged frog would likely have been detected if they occurred within the RMDP area. Lastly, because of the overwhelming presence of non-native species (e.g., African clawed frogs (*Xenopus laevis*), bullfrogs (*Rana catesbeiana*), bass species, etc.) within the action area, we believe the California red-legged frog to be

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precluded from the site due to predation. Consequently, we believe the proposed RMDP activities would not adversely affect the California red-legged frog and it will not be discussed further in this document.

This biological opinion is based on information that accompanied your request for consultation, including the biological assessment (URS 2010), Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan, Final Joint Environmental Impact Statement and Environmental Impact Report (Corps and California Department of Fish and Game (CDFG) 2010) and information in our files. A complete record of this consultation can be made available at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

On October 13, 2009, the Service proposed critical habitat for the arroyo toad (74 Federal Register (FR) 52612). Proposed RMDP activities located within the Santa Clara River fall within what was proposed critical habitat Unit 6 for the arroyo toad. During a meeting on November 6, 2009, with Mark Subbotin and Matt Carpenter of Newhall Land and Farming, Chris Dellith of the Service recommended that because the critical habitat could become final during the proposed RMDP activities, the Corps should request a conference opinion regarding the project effects on the proposed critical habitat for the arroyo toad. We received an electronic mail correspondence (e-mail) of your request for a conference opinion on November 10, 2009.

Subsequently, due to the complexity of this consultation and the time it took to complete, the critical habitat designation became final on February 9, 2011 (76 Federal Register (FR) 7246). We incorporated the revised final critical habitat for the arroyo toad into this document and have made it a biological opinion rather than a conference opinion. This obviates the need to convert any conference opinion into a biological opinion.

BIOLOGICAL OPINION

The Corps' request for consultation indicates that the projected buildout of the RMDP requiring a permit from them will take 25 years. The Corps' permit and its discretionary authority will be in effect for those 25 years. Consequently, the duration of this biological opinion will also be 25 years, coinciding with the date of issuance of the Corps' permit and its termination. Any take that occurs outside of the Corps' discretionary authority or beyond the duration of its permit and this biological opinion would not be exempt from the prohibitions provided for in section 9 of the Act. In the absence of a further federal nexus, the applicant should apply for an incidental take permit pursuant to section 10(a)(1)(B) of the Act for take that is not exempted from the section 9 prohibitions, especially at the end of the 25-year period.

DESCRIPTION OF THE PROPOSED ACTION

The Corps proposes to issue a long-term Individual Permit under Section 404 of the Clean Water Act authorizing those components of the RMDP that would require the placement of fill material within waters of the U.S. The activities to be authorized by the Corps include: temporary haul routes; nature viewing platforms; wastewater reclamation plant outfall; storm drain outlets; modified tributary drainages; bank stabilization; grade control structures; bridges and road crossings; engineered natural channels; trail crossings and building pads; debris and detention basins; and powerlines, towers, and utility crossings.

The RMDP is a comprehensive plan of development and conservation in an area located in northern Los Angeles and eastern Ventura counties. The RMDP area encompasses approximately 13,651 acres and includes the Newhall Ranch Specific Plan (Specific Plan). The Specific Plan was approved by the County of Los Angeles on March 27, 2003, and establishes the general plan and zoning designations necessary to develop the Specific Plan area with residential, commercial, and mixed uses over the next 20 to 30 years (County of Los Angeles 2003). At build-out per the Specific Plan, the proposed Newhall Ranch development 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. Open space would be provided on approximately 8,683 acres within the Specific Plan area, and an additional 1,517 acres of open space in the Salt Creek area adjacent to the Specific Plan area for a total of approximately 10,200 acres of open space within the RMDP. The open space would also include land dedicated to the preservation of the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi var. fernandina*).

Newhall Ranch Resource Management and Development Plan Components

Bridges and Road-Crossing Culverts

Two river bridges and three tributary bridges, and 13 new road-crossing culverts would be installed to serve the Specific Plan development, and to accommodate future traffic associated with development of the Specific Plan and the region. Two bridges, Long Canyon Road Bridge and Commerce Center Drive Bridge[1], would be installed over the main stem of the Santa Clara River. Three bridges would cross tributary drainages (one each at Chiquito, San Martinez Grande, and Potrero drainages). The bridges are proposed to be constructed of conventional concrete girders placed over concrete-filled piers. Twelve of the 13 new road-crossing culverts

[1] The Commerce Center Drive bridge was addressed in previous consultations with the Corps (1-8-98-F/C-61 and 1-8-02-F-4R). We are addressing it in this biological opinion because sufficient time has passed and the final arroyo toad critical habitat designation warrants reinitiation of consultation for this feature as part of the larger RMDP project. The findings of this biological opinion supersede those made in the previous consultations for the Commerce Center Drive bridge within the RMDP area.

would cross five tributaries to the Santa Clara River. A thirteenth road-crossing culvert would cross Ayers Canyon, near Potrero Mesa. The road crossings are proposed to be constructed of earthen fill and pre-fabricated arched culverts.

Bank Stabilization
Bank stabilization would be installed along portions of the Santa Clara River and its tributary drainages within the RMDP area. Bank stabilization would include buried soil cement, grouted and ungrouted rock riprap, turf reinforcement mats, and limited gunite slope lining in and around bridge abutments and other areas where other methods are not technically feasible. Approximately 105,207 linear feet of buried bank stabilization would be placed along the River Corridor and tributaries within the Specific Plan portion of the RMDP area. Raising of the ground surface for building pads would occur in areas along the Santa Clara River and major tributary drainages to protect land uses from flooding.

Drainage Facilities
Drainage facilities would be installed and include open and closed drainage systems, inlets, outlets, bank stabilization, and National Pollutant Discharge Elimination System (NPDES) water quality basins. The proposed drainage structures focus on minimizing the amount of debris that would enter the drainage system, and maintaining the quality of water within the system.

Water Quality Control Facilities
Pursuant to NPDES requirements, Best Management Practices (BMPs) would be implemented, including the following water quality control facilities: 1) water quality basins; 2) debris basins, located just upstream of the interface between developed and undeveloped areas, primarily to trap debris coming from the upper watersheds (Debris Retaining Inlets [DRI]); 3) detention basins, which are typically sized to capture the predicted runoff volume and retain the water volume for a period of time (usually 24 to 48 hours); 4) catch basin inserts or screens/filters installed in existing or new storm drains to capture pollutants in the stormwater runoff; 5) bioretention, such as vegetated, grassy swales, that provide water quality benefits and convey stormwater runoff; and 6) solids separator units or in-line structures that reduce or manipulate runoff velocities such that particulate matter falls out of suspension and settles in a collection chamber.

Tributary Drainages
<u>Modified Tributary Drainages – Existing Channels Stabilized.</u> Some of the existing major tributary drainages within the RMDP area (e.g., Chiquito Canyon and San Martinez Grande Canyon and portions of Lion, Long and Potrero canyons) would remain intact, but would sustain permanent and temporary impacts from construction of stabilization elements, including buried bank stabilization and grade stabilization structures. Areas subject to temporary impacts would be appropriately planted with native vegetation following construction activities.

<u>Modified Tributary Drainages – Regraded Channels.</u> Portions of some existing drainages in the RMDP area (e.g., portions of Long, Lion, and Potrero canyons), would be graded, and a new

drainage would be constructed in the same or similar location. The new drainages would be designed to incorporate buried bank stabilization and grade stabilization, and would have sufficient hydrologic capacity to pass the Los Angeles County Capital Flood without the need for clearing vegetation from the channels. The new channel banks would be appropriately planted with native vegetation following construction.

Unmodified (Preserved) Drainages. Among the minor tributary drainages within the RMDP area, some are located in areas where no impacts are proposed, and are distant enough from surrounding development that bank stabilization or any routine maintenance would not be required. These drainages would remain in their existing condition; although portions of these drainages may be suitable for restoration where channel morphology and habitat have been degraded, the RMDP does not propose to impact or enhance these drainages at this time. In most situations, unmodified drainages would be located within future open space areas and maintain their current hydrologic functions, as well as providing linkages for wildlife movement to and from the Santa Clara River.

Drainages Converted to Buried Storm Drains. Some of the drainages within the RMDP area, including many of the smallest, ephemeral streams, would be graded. Development flows in these drainages meet the Los Angeles County flood criteria (less than 2,000 cubic feet per second (cfs)) to be conveyed by storm drain. Because of the small, ephemeral nature of these drainages, under the RMDP, Newhall does not propose to create new drainage channels to replace these impacted drainages. Rather, these areas would be graded with the development activities and new buried storm drain systems would be installed pursuant to the development plans. Wet-weather flows from these areas occupy the drainages that would be routed into the development's storm drain system, and would be discharged to the Santa Clara River via the proposed storm drain outlets and BMPs, as applicable.

Grade Stabilization Structures. Grade stabilization structures would be installed on five existing tributaries (Chiquito Canyon, Long Canyon, Potrero Canyon, San Martinez Grande Canyon, and Lion Canyon) to the main stem of the Santa Clara River. The grade stabilization structures are designed to contain the hydraulic "jump" that occurs when there is a significant drop in streambed elevation, so that higher velocities are dissipated within the area. The structures would help control erosion and changes to channel morphology. Such structures would be constructed of soil cement, sheet piles, or reinforced concrete.

Utility Corridors. Various electrical, sewer, water, gas, and communications lines would be installed parallel to the right-of-way of SR-126 to bring utilities to various planning areas and the WRP. These utilities would require some bank stabilization along the Santa Clara River and cross various drainages (Castaic Creek, Chiquito Canyon, San Martinez Grande, and other minor drainages) either buried beneath the creekbed, suspended from bridges, or located in the road bed at culverted crossings.

Utility Crossings. Various electrical, sewer, water, gas, and communications lines would be installed across the Santa Clara River, Chiquito Canyon, San Martinez Grande Canyon, Potrero Canyon, and Long Canyon to serve the Specific Plan. Typically, the utility lines would be installed in rights-of-way adjacent to bridges where access for installation and maintenance can be easily accommodated. Smaller utility lines serving local planning areas may cross beneath the bed of stabilized, regraded, or preserved channels and drainages.

Temporary Haul Routes for Grading Equipment. Temporary haul routes across the Santa Clara River would be used during construction to move equipment and excavated soil to locations in the RMDP area where fill is needed.

Wastewater Reclamation Outfall Construction Activities. An effluent outfall pipeline would be constructed from the Newhall Ranch WRP through the bank stabilization to the bed of the Santa Clara River. An earthen channel and adjacent walkway also would be constructed to reach the confluence of the outfall and actual flow path of the River.

Roadway Improvements to SR – 126. Various roadway improvements to SR-126 would made within the vicinity of the RMDP area, including new bridges or culvert crossings and outlets at Castaic Creek, Chiquito Canyon, San Martinez Canyon, and other minor drainages.

Roadway Improvements to Magic Mountain Parkway. To realize the Specific Plan approved traffic circulation plan, Magic Mountain Parkway would be widened and extended from its current limits into Newhall Ranch.

Maintenance Activities. The Los Angeles County Department of Public Works (DPW) or other management entity would conduct regular and ongoing maintenance of flood, drainage, and water quality protection facilities in the RMDP area. Such activities would include periodic inspection of structures and monitoring of vegetation growth and sediment buildup to ensure that the integrity of the structures is maintained and that planned conveyance capacity is present. Maintenance may also include repairs and maintenance of bridges and bank stabilization, repair to buried, suspended, and overhead utilities, and/or emergency maintenance activities. The RMDP Maintenance Manual in Appendix A of the RMDP, incorporated here by reference, specifies the anticipated maintenance practices and restrictions for each facility type described above and includes general restrictions for all maintenance (Dudek 2010).

Recreation Facilities. The Specific Plan Master Trails Plan describes a comprehensive system of bicycle, pedestrian, and equestrian trails. Implementation of the RMDP would include construction of these features, including several new trail bridges at various large and small tributaries and construction of up to eight nature viewing platforms that would be located in or adjacent to jurisdictional areas along the Santa Clara River.

Geotechnical Investigations. Geotechnical investigations may occur throughout the RMDP area. Equipment would access investigation sites along a 10- to 20-foot-wide access route and would

utilize access ramps of similar width, as necessary. Investigation sites typically require a cleared area for safe access. Test Pit excavations would be up to 20 feet deep, 36 inches wide, and 200 feet long, with the excavated soils temporarily piled adjacent to the excavation and then placed back into the excavated area. Activities are generally within areas that would be impacted by future RMDP development components.

Habitat Enhancement and Restoration Activities. The RMDP incorporates a variety of design features intended to minimize impacts to riparian and upland resources along and within the Santa Clara River and its tributary drainages, including avoidance, minimization, restoration, and enhancement activities. In addition, the RMDP would include features, such as removal of grazing to enhance riparian habitat, and rehabilitating native habitat areas that have been disturbed by past activities or invaded by non-native plant species. These activities would primarily occur in the following areas: River Corridor SMA, Salt Creek Corridor, and High Country SMA. Other open space, Open Area, Manufactured Open Area, and other suitable locations may be proposed to CDFG and the Corps in the future for additional enhancement and restoration activities.

Newhall would construct most of the above facilities; however, other entities could construct some of these facilities on behalf of the applicant using the Section 404 permit issued to Newhall by the Corps. The Section 404 permit would also include routine maintenance activities to be carried out DPW (or other entities). Any party working under the Section 404 permit on behalf of Newhall would be bound by the same conditions in the Section 404 permit. Under the proposed long-term permit, subsequent maintenance or construction activities for a given portion of the RMDP area could also be transferred to another entity. Therefore, if Newhall wants to transfer construction or maintenance of flood control or other facilities within the RMDP area, Newhall and the potential transferee would be required to submit a joint written notice to the Corps for the proposed transfer of authorization, subject to the Corps' approval.

Santa Clara River Development Components

Under the RMDP, Newhall proposes bank stabilization, two bridges (one previously authorized), the Newhall Ranch WRP outfall, bank stabilization along the utility corridor, temporary haul routes, water quality control facilities (including outlet structures/energy dissipaters), viewing platform locations, and habitat enhancement activities.

Bank Stabilization – Santa Clara River

Under the RMDP, Newhall proposes buried bank stabilization where necessary to protect against flooding and erosion pursuant to Federal Emergency Management Administration (FEMA) and Los Angeles County Department of Public Works' requirements. The bank stabilization is designed and would be constructed to retain the Santa Clara River's significant riparian habitat, and to allow the river to continue to provide flood protection pursuant to Los Angeles County standards.

Buried bank stabilization would extend along the north and south banks of the Santa Clara River. In total, the Newhall proposes installation of approximately 26,539 linear feet of bank stabilization along the north and south banks of the Santa Clara River to facilitate build-out of the Specific Plan area. Approximately 24,639 linear feet of buried bank stabilization (93 percent) would be installed in non-jurisdictional areas adjacent to the river. Such installation would result in newly created river channel and jurisdictional areas (approximately 94 acres), as well as upland habitat.

The RMDP incorporates the following types of bank stabilization: 1) buried soil cement; 2) ungrouted rock riprap; 3) gunite slope lining; and 4) turf reinforcement mats (TRMs). These types of bank stabilization can be divided into two different categories, flexible and rigid revetments. Ungrouted rock riprap and TRMs are flexible revetment systems that would be used as exposed bank stabilization in areas that do not have earthen cover and where stream velocities are low enough to ensure that the stabilization can resist erosive hydraulic forces. Generally, this would be a maximum stream velocity of 12 to 14 feet per second. Rigid revetments are able to resist much higher velocities or erosive forces; however, they do not adjust or move like flexible systems. Rigid revetments can resist velocities in excess of 20 feet per second.

Maintenance of buried soil cement and TRMs would be minimal. The use of buried soil cement, and other buried bank stabilization, eliminates the need to maintain a clear zone at base of the bank. In general, no maintenance is required unless there is evidence of bank failure, in which case temporary impacts to resources remaining on and around the failed structure may be necessary to repair the failure. Ungrouted rock riprap and gunite slope lining would require removal of trash and debris, replacement of riprap, and removal of trees and other vegetation possibly impeding access or threatening the structural integrity of the levees. If access to the bottom of the river is required, in general, the work area would be an approximately 30-foot-wide zone extending outward from the levee at the invert and 15 feet upstream and downstream on either side of the material to be removed.

These bank areas would require clear access for inspection and potential maintenance for structural repairs, graffiti removal, etc. A mow-strip area approximately 15 feet wide, parallel to the gunite lining, would be routinely cleared of woody vegetation to allow for visual inspections. Repairs may require a work area that is the same size as the original work area used for construction of the structure under repair (Matt Carpenter, Newhall, pers. comm., 2010).

Bridges/Road Crossings – Santa Clara River

Under the RMDP, Newhall proposes construction of two bridges across the Santa Clara River: one at Commerce Center Drive (previously authorized under Corps Permit No. 94-00504-BAH and Lake/Streambed Alteration Agreement No. 5-502-97 and identified here for information purposes only) and one at Long Canyon Road. Structural repairs may be necessary to bridge supports or bridge decks that can only be completed from within the riverbed. In addition, subsequent to major storm seasons or events, accumulated debris and vegetation may create hazardous conditions to bridge supports. This includes growth of large woody vegetation along

the length of the bridge, which may reduce the flood flow capacity during such major storm events and provide locations for debris to accumulate. Depending on scope of repairs or debris and vegetation to be removed, it may be necessary for heavy equipment to be operated within the channel. Whenever practical, repairs or maintenance to bridges would be made from the bridge deck, although if this is not practical, encroachment upstream and/or downstream of the bridge may be necessary. The maintenance work area for structural repairs would be limited to the area necessary to complete the work and for access, generally 30 feet on either side of the bridge and under the bridge itself. Access ramps, as necessary, would be located as close to the repair site as feasible, with preference given to locations with minimal mature vegetation, lacking flowing water, and requiring minimal bank disturbance.

Temporary Haul Routes-Santa Clara River
During construction, three temporary haul routes would cross the Santa Clara River, for moving excavated soil and to provide general construction access to locations within the RMDP area where fill is needed. The proposed crossings would be two-way with 60 feet of travel surface width. In locations where the riverbank is steep and ramping is required, fill would be placed in the River to create a safe slope ratio for passage of heavy equipment. Extra width for the side slopes of such crossings would be required. Passage of river flows would be maintained for all periods when the temporary haul routes are in use, and may include culverts or simple span bridge crossing of flowing water. Crossings may be removed as necessary to pass larger winter flows.

These temporary haul route locations would be used during construction of all four planning areas: Mission Village, Landmark Village, Homestead Village, and Potrero Village. Between periods of use, the haul routes would either: 1) revert back to general ranch use (oil and gas and agricultural); 2) be rendered inoperable by removal of portion crossing flowing water; or 3) if no longer needed for ranch operations, the approaches to the river crossings would be gated, or otherwise controlled, to prevent unauthorized access to the river corridor until such time that they are put into service for grading or permanently closed and restored to appropriate native habitats. As they are not permanent features, temporary haul routes would not require maintenance.

Viewing Platforms-Santa Clara River
Under the RMDP, Newhall proposes to construct five nature viewing platforms that would be located in or adjacent to jurisdictional areas along the Santa Clara River corridor. General maintenance of viewing platforms would include repair, painting, or coating of structures or trimming of native growth encroaching on the pathways.

Wastewater Reclamation Plant Outfall-Santa Clara River
An effluent outfall pipeline, approximately 30 inches in diameter, would be constructed from the Newhall Ranch WRP through the bank stabilization to an energy dissipater and pilot channel out to the bed of the Santa Clara River. The approved Newhall Ranch WRP is to be located on the

south side of State Route (SR)-126, adjacent to the Santa Clara River and near the Los Angeles County/Ventura County jurisdiction line.

The outfall pipe would terminate on the side of the bank stabilization, similar to a typical storm drain outfall where an energy dissipater would be located. A pilot channel and adjacent walkway would be constructed and maintained to reach the actual flow path of the River. The walkway would be used to obtain water samples, which would be required under the National Pollutant Discharge Elimination System (NPDES) permit for the Newhall Ranch WRP. The channel would be excavated with equipment and lined with concrete, gunite, turf reinforcement mat (TRM), rock, or if velocities are low enough, simply compacted soil. The channel and walkway would be maintained periodically to restore functions lost due to storm damage, vegetative growth, or soil erosion from plant discharge. Maintenance would be limited to hand cutting vegetation along the path, maintaining the outlet and energy dissipater and restoration of the functions of the pilot channel.

Storm Drain Outlets-Santa Clara River
Under the RMDP, Newhall proposes installation of 25 storm drain outlets along the Santa Clara River. Installation of storm drain outlets would require a 20-foot-wide excavation/construction zone. All of the storm drain outlets would eventually drain to jurisdictional areas of the Corps and CDFG. Maintenance of storm drain outlets would include clearing vegetation and removal of accumulated sediment. In situations where drain outlets are not draining sufficiently, pilot channels up to 75 feet long by 10 feet wide may be created to facilitate the conveyance of storm flows.

Tributary Drainages
Within the tributary drainages in the RMDP area, certain drainages would not be graded and would remain undisturbed, while other drainage areas would be graded, reconstructed to a soft-bottom drainage channel with buried bank stabilization along each side of the drainage, or converted to buried storm drain. Reconstructed drainage areas would integrate flood control and grade stabilizing measures (i.e., a combination of drop structures/grade stabilizers and bank stabilization) to maintain sediment equilibrium and protect the channel bed and banks from hydro-modification impacts. This design methodology is intended to create stable drainage channels that would support in-channel native habitats following RMDP implementation. The approach focuses on developing channel width, depth, slope, and other parameters based on the future flow and sediment regime of each drainage, using an integrated approach that predicts stable characteristics, and that uses structures and other measures only in those drainage locations where erosional forces would exceed the natural stability of the drainage channel. All such structures (bank and channel bed stabilization) are designed to mimic natural features and use a combination of structural and vegetative methods to provide drainage channels that are stable, visually aesthetic, and provide for the desired habitat (i.e., riparian, wetland, and upland) with minimal maintenance required after RMDP implementation. Road-crossing culverts and bridges would cross various drainages, but only where necessary to accommodate the approved Specific Plan circulation system. Modified drainage/jurisdiction includes stabilized and

engineered tributary drainages that are renegotiated and where new drainage/jurisdiction is being created.

Grade Stabilizing Design Measures and Bank Stabilization
The five modified drainages (Chiquito Canyon, Lion Canyon, Long Canyon, Potrero Canyon, and San Martinez Grande Canyon) would contain structures (bank and channel-bed stabilization) designed to mimic natural features, and use a combination of structural and vegetative methods to provide drainages that are stable, visually aesthetic, and support the desired habitat following RMDP implementation. Described below are drop structures/grade stabilizers and bank stabilization techniques that would be used in the design of the modified drainages within the RMDP boundary.

Grade Stabilization Structures. On-site soils would be combined with cement and water to form a higher strength soil-cement mixture that would mimic the appearance of soils in the drainage area. Riprap would be placed in and along the structure and downstream, and would be planted with native vegetation. Soil cement would be mixed on site, placed, compacted, finished, and cured, resulting in a durable and erosion-resistant material.

Grouted Sloping Boulder Drops. Boulders, typically with a 24-inch minimum diameter, would be placed in a step-like fashion, creating a condition similar to that in a natural riffle or small cascade. Boulders would be placed to minimize channel erosion at the downstream end of the boulder drop. Grout would be placed at the bottom one-third to one-half of the depth of the boulders to lock them together. In some cases, where the stream discharge and gradient are not excessive, grouting of the boulders would not be necessary, and non-grouted, placed boulders could be installed. Riprap would be placed along the approach, in the upper voids of the boulders, along the upper banks, and downstream of the stilling basin, and would be planted with native vegetation.

Non-grouted Boulders and Step-pools. Boulders, composed of various sizes between 24-inch and 36-inch minimum diameter, would be placed to form a step-pool complex, which would prevent excessive scour, while maintaining a functional drainage system. Boulders would be placed on the face of the step-pool structure, the crest, the lower part of the side slopes, and pool. The sub-base of the structure would be adequately designed using a mixture of compacted soil and riprap. The boulders would be individually placed and chinked to lock them together. Native plants would be established to help prevent boulders from dislodging. The non-grouted boulder step-pool would be designed for less than Q_{cap} (capital flood standard) and have typical dimensions of roughly 50 feet by 50 feet. Riprap would be placed along the approach, in the upper voids of the boulders, along the upper banks, and downstream of the pool, and would also be planted with native vegetation.

Sculpted Concrete Drop Structures. Poured and shaped concrete would be molded to form an aesthetic modification to the grouted sloping boulder style drop structure. Design of these drop structures would be conducted individually but similarly to the grouted sloping boulder drop

design. The finished product would be analogous to a natural streambed in a bedrock-dominated system, with alternating fast, narrow segments and broader, deeper pools. Construction typically would be conducted with a single monolithic full-depth pour or using a two-pour system over steel reinforcement, then contoured and textured to finish. Planting wells would be considered to help revegetate and conceal the structure.

Grade control and drop-pool structures are designed to be primarily self-cleaning with limited need for sediment removal or vegetation control. In the event vegetative growth threatens the integrity of the crest, chute, or splash pool, such vegetation may be hand-cut and removed. Sediment is to be removed when sedimentation occurs to the point that the structure does not function or causes nuisance conditions. These features would likely be within reasonable distance of a service road, therefore, access would be limited to short-distance travel over open scrub habitat. General vegetation clearing would not be required within the banks of the tributaries. Invasive species may require control. Clearing of excess sedimentation to enable proper flow characteristics, or to abate nuisance ponding conditions, may be required.

Bridges/Culvert Road Crossings—Tributaries/SR-126
In addition to the proposed and previously approved bridges over the Santa Clara River, the RMDP addresses three proposed widened bridges/culvert road crossings at SR-126. There are two proposed widened bridges at SR-126, the first is at Castaic Creek (six lanes expanded to eight) and the second is at San Martinez Grande Canyon (four lanes expanded to six). There is also one proposed culvert extension at SR-126 and Chiquito Canyon (four lanes expanded to six) (depending on Caltrans final design decision on the SR-126/Chiquito Canyon interchange, the culvert depicted may in actuality include three independent bridge decks and a separate trail bridge). The proposed widened bridges/culvert road crossings are part of the Caltrans widening project for SR-126, and they are proposed by Caltrans to accommodate increased traffic flow along SR-126.

A previously approved project processed by the applicant allowed for expansion of the SR-126/Castaic Creek Bridge from four to six lanes, which widened the bridge by an additional 50 feet. The proposed RMDP would widen this previously approved bridge from six to eight lanes. An additional 50 feet of width, plus a separate 10-foot-wide pedestrian/bike lane, would be located on the south side of the bridge, with utility crossings located on both the north and south sides of the bridge in a 100-foot-wide disturbance zone.

Structural repairs may be necessary to bridge supports or bridge decks that can only be completed from within the riverbed. In addition, subsequent to major storm seasons or events, accumulated debris and vegetation may create hazardous conditions to bridge supports. This includes growth of large woody vegetation along the length of the bridge, which may reduce the flood flow capacity during such major storm events and provide locations for debris to accumulate. Depending on scope of repairs or debris and vegetation to be removed, it may be necessary for heavy equipment to be operated within the channel. Whenever practical, repairs or maintenance to bridges would be made from the bridge deck, although if this is not practical,

encroachment upstream and/or downstream of the bridge may be necessary. The maintenance work area for structural repairs would be limited to the area necessary to complete the work and for access, generally 30 feet on either side of the bridge and under the bridge itself. Access ramps, as necessary, would be located as close to the repair site as feasible, with preference given to locations with minimal mature vegetation, lacking flowing water, and requiring minimal bank disturbance.

Magic Mountain Parkway Extension
The approved Specific Plan includes an extension of Magic Mountain Parkway to the west into the RMDP area. The purpose of this roadway extension is to accommodate future traffic associated with the continued development of the approved Specific Plan and surrounding region. This roadway extension would extend existing culvert road crossings at Unnamed Canyon 1 and Unnamed Canyon 2 over drainages, both tributaries of the Santa Clara River. Construction of this road results in a permanent impact to the drainages for extending existing culverts and construction of debris retaining inlets.

Temporary impacts would include areas necessary for construction of the debris retaining inlets. Following completion of construction activities, the temporary impact zone would be restored to the original channel grade and revegetated with native riparian and upland species as appropriate.

Utility Crossings
Primary electrical, sewer, water, gas, and communications lines would be installed across the Santa Clara River at two locations, Chiquito Canyon, and San Martinez Canyon to serve the approved Specific Plan (County of Los Angeles 2003). Other locally serving utilities would be installed across other tributaries and drainages described in the RMDP.

On the River, utility lines would be installed in rights-of-way adjacent to, within, or hanging from bridges where access for installation and repair could be readily accommodated. To the extent feasible, utility lines would be located within the elevated bridge deck. Depending on the timing of bridge construction and subsequent installation of utilities, access to the riverbed and/or creekbed may be necessary to facilitate placement or hanging of pipes and conduits. Access activities would result in temporary impacts to riverbed vegetation. For installation of buried utilities, directional drilling techniques would be used, where feasible, to avoid the environmental impacts associated with trenching across the Santa Clara River. In the Chiquito Canyon and San Martinez Grande Canyon tributaries, where trenching is likely to be used, installation of buried lines would require a 30- to 50-foot-wide construction zone. In other tributaries and drainages, trenching is also likely to be used with similar construction zones. Buried lines across watercourses would be located below scour depth and weighted or cemented in place, where appropriate, or collocated with bed stabilization features that provide scour protection. Following completion of construction activities, the temporary impact zone would be restored to the original channel grade and revegetated with native riparian and upland species, as appropriate. Permanent access for maintenance of utilities would be located outside the Corps and CDFG jurisdictional limits of the streambed and associated wetlands.

Water Quality Treatment Basins and Debris Basins

Under the RMDP, Newhall proposes to implement a sub-regional stormwater mitigation plan to address the Specific Plan's construction, municipal, and industrial stormwater discharges under the NPDES program. This program requires that all flood control facilities comply with the General Permit for Los Angeles County or conditions placed upon individual NPDES permits. As build-out of the Specific Plan occurs, individual tract maps would comply with those NPDES requirements in effect at the time the proposed water quality features are designed. The drainage concept for the Specific Plan was developed to respond to the NPDES program. Project-specific drainage concept reports are to be prepared with each tract map. The drainage plans would include implementation of BMPs to document compliance with the Los Angeles County Standard Urban Stormwater Mitigation Plan (SUSMP) requirements.

Each of these water quality control facilities requires maintenance, and may or may not be located within the Corps' and CDFG's jurisdictional areas. Because of their function as water conveyance from development areas, unwanted vegetation may develop, reducing the conveyance capacity for certain features. The RMDP Maintenance Manual in Appendix A of the RMDP, incorporated here by reference, specifies the anticipated maintenance practices and restrictions for each facility type and includes general restrictions for all maintenance (Dudek 2010). In general, each facility type would require periodic removal of vegetation, sediment, and debris; although some facility types would require planting and maintenance of specific plant species to maintain function. Access ramps to the facilities would be maintained clear to allow access. Respecting the fact that natural habitats may form in these man-made features, the maintenance practices and mitigation measures are to be implemented in these types of facilities regardless of Corps and CDFG jurisdictional location to avoid and/or minimize effects on species.

Under the RMDP, Newhall proposes NPDES water quality treatment/detention basins throughout the RMDP area. Water quality treatment/detention basins are typically sized to capture the predicted runoff (first flush) volume and retain the design volume for a period typically between 24 and 48 hours. Detention basins would be designed with multiple stages to provide both flood control and water quality benefits. The upper stage is designed to store a large volume of runoff to reduce flood peaks. The lower, smaller volume stage provides slower drainage times (longer detention) to promote water quality by settling of particulates and removal of nutrients, heavy metals, and other pollutants potentially present in the sediment.

Debris Basins

Throughout the RMDP area, various open channel, buried storm drain, and natural drainage areas would be fed by overland flow from the upstream watersheds. These systems eventually drain into the Santa Clara River. To ensure the proper function of the engineered portions of the storm drainage system, in certain areas debris retaining inlets are proposed at the interface between development and undeveloped areas upstream. The precise locations of the basins and access to the basins would be defined by subsequent tract maps that implement the Specific Plan.

Geotechnical Investigations
Geotechnical investigations are conducted to give a better understanding of subsurface geologic and hydrogeologic conditions to engineers, planners, and reviewing agencies when determining design feasibility of flood protection structures. On occasion they are also used to determine the depth of alluvial deposits that may coincide with jurisdictional areas. Investigations, and associated access into jurisdictional areas if necessary, would occur in advance of development mass grading. The activities are typical of short duration, 1 to 3 days, and may be extended based on the complexity of the site and investigative methods.

Investigation activities have similar impacts as typical construction activities, primarily related to creating access areas, although on a much reduced scale. Equipment used during these activities may include drill rigs, van-truck mounted drill rigs (CPT), backhoes and excavators (for digging test pits), dozers and rubber tire loaders (to dig trenches), and various support vehicles (pickups, tool-trucks). Equipment would access investigation sites along a 10- to 20-foot-wide access route, avoiding species and habitats to the extent possible. Where necessary, an access ramp would be cut into the river or creek bank to reach the lower terrace and bed locations. At the completion of activities, the bank would be returned to its original configuration. Vegetation in the access route and at the drill site would be cut a few inches above the ground surface to allow for re-vegetation. At a drilling site, an area 20 feet by 50 feet would be cleared of vegetation for personnel and fire safety.

At test pit excavations, a trench up to 20 feet deep, 36 inches wide, and 200 feet long may be opened, with the excavated soils temporarily piled adjacent to the excavation. At completion of the trench, it would be backfilled and stabilized with native vegetation. Trench excavations may be much wider and longer than test pits and generally are deeper, possibly involving dozers.

Maintenance Activities
DPW, or other responsible management entity, would maintain flood, drainage, and water quality protection facilities located within the RMDP area. In general, maintenance activities would involve the periodic inspection of the structures to ensure that the structures are intact, and to monitor any flow capacity restrictions due to vegetation growth and sediment buildup at or near the structures. Maintenance activities would be initiated if the integrity of the structures is compromised or if conveyance capacity is inadequate.

In addition, DPW, or other responsible management entity, would conduct regular maintenance to ensure that all flood control structures operate at their design standards. For example, DPW requires that open channels, closed conduits, bridges, dams, and debris basins (not under State of California jurisdiction, i.e., dam safety) accommodate flows resulting from a Capital Flood. Other facilities in developed areas must be designed to accommodate the “Urban Flood,” which is the amount of runoff resulting from a 25-year frequency storm falling on a saturated watershed. In the RMDP area, maintenance may include activities such as:

- Periodic removal of woody vegetation from riprap to protect its structural integrity;
- Periodic clearing of storm drain outlets to ensure proper drainage;
- Periodic removal of ponded water that causes odor and/or mosquito problems;
- As-needed repairs and routine maintenance of bridges, decks, piers, abutments, and associated facilities (e.g., utilities, clearing of trapped debris and vegetation);
- As-needed repairs of bank stabilization;
- As-needed vegetation, debris, and sediment deposit removal at detention and debris basins;
- Periodic inspection, vegetation removal, and repair to creek-bed stabilization structures;
- Periodic vegetation removal and sediment removal at road-crossing culverts;
- Vegetation control and repair to viewing platforms and trails (including associated fencing);
- Exotic and invasive plant and animal species control efforts; and
- Emergency repair activities.

Routine maintenance of drainage facilities may require the use of a backhoe, excavator, loader or other similar construction equipment to excavate accumulated sediment and other debris and hand tools for cutting of vegetation. The excavated soil material would be placed into off- and/or on-highway trucks for removal from the site and transportation to an approved reuse or disposal site. To the extent feasible, cut native materials would be mulched and beneficially reused on or off site, and any invasive species would be directed to proper disposal. Maintenance activities in the RMDP area could be conducted by any responsible management entity pursuant to the RMDP agency permits and agreements.

The RMDP Maintenance Manual for use within the RMDP area and incorporated here by reference, identifies the extent and frequency of various maintenance activities that may occur on site and describes standard mitigation, monitoring, notification, and reporting conditions applicable to all types of maintenance activities (Dudek 2010).

Environmental Protection During DPW Maintenance Activities
Appendix A of the RMDP (the Maintenance Manual), incorporated here by reference, describes minor and major maintenance procedures designed to avoid impacts to endangered species and minimize impacts to other riparian resources (see Sections 2.1 and 2.2 of the manual) (Dudek 2010). Some of the design features that accomplish this are:

- The use of buried soil cement, and other buried bank stabilization, which eliminates the need to clear a zone at the base of the riverbank or creek-bank where buried bank stabilization is located;

- Grade control and drop structures designed to be primarily self-cleaning with limited need for sediment removal or vegetation control; and

- Allowing large trees to grow in the upland or transitional habitat zones (typically consisting of upland scrub and grassland mitigation areas constructed along the margins of stream courses), at or near buried soil cement and other bank stabilization.

Specific procedures to limit the impact of maintenance activities, incorporated here by reference, are detailed in the RMDP Maintenance Manual (Dudek 2010). Procedures relating to access, work-zone restrictions, and monitoring outline the avoidance of riparian vegetation and streams, the passive restoration of areas temporarily disturbed, the installation of silt-settling basins for the maintenance activities, the location of staging and storing areas outside the streambed, and other actions.

Procedures relating to avoidance and mitigation of impacts of maintenance on sensitive species of fish and amphibians include surveys for sensitive species prior to initiation of maintenance activities, the removal and relocation of sensitive species by a qualified biologist, and various measures relating to the diversion of stream flow in the event that maintenance work in the stream is unavoidable. A qualified biologist would be present when any stream diversion takes place. Procedures relating to avoiding or mitigating impacts of maintenance on sensitive bird species include weekly surveys for nesting native birds, the postponement of maintenance activities within 300 feet of active nests (500 feet for raptors), and specific procedures to avoid impacts to special-status species using upland habitats.

Procedures relating to the avoidance and mitigation of impacts of maintenance on sensitive mammal and reptile species outline the species surveyed for prior to maintenance activities, based on the habitat types in which these activities would take place. Maintenance activities within the RMDP area would be conducted in adherence to the procedures identified in the RMDP maintenance manual, incorporated here by reference (Dudek 2010).

Agency Notification of DPW Maintenance Activities
The owner/operator or DPW would notify the Corps, CDFG, Los Angeles Regional Water Quality Control Board (Board), and Service at least 30 calendar days in advance of any planned maintenance activities. The Corps and CDFG would respond within the 30 day period, either notifying DPW that: 1) the maintenance activities can proceed as planned because they are consistent with the RMDP, EIS/EIR, and conditions of the agency Permits, or 2) the activities cannot proceed as planned. In the latter circumstance, the agencies would provide written reason for denial and suggest how the notification may be revised or corrected. The agencies would also make staff available to discuss inconsistencies or problems. The agencies have the discretion to add conditions to the authorization for any maintenance activities if needed to ensure compliance with applicable state and federal laws, regulations, and codes. Results of any surveys and relocation efforts for aquatic, reptile, and mammalian species would be provided to CDFG in the Annual Mitigation Status Report.

Catastrophic Failures
Events related to full or partial failure of a structure would require, in some instances, immediate response and repair, sometimes during storm flow conditions. In the event of a catastrophic failure the following responses may occur:

- Emergency work would follow the notification procedures of the agency permits;
- Significant damage may require reconstruction or repair to creek bank stabilization (soil cement, gunite, grouted and ungrouted riprap, and other erosion control systems);
- Significant erosion may require filling and regrading the damaged areas;
- Geotechnical instrument installation and monitoring may be required to investigate and control unstable subsurface geologic conditions;
- If a Geological Hazard Abatement District (GHAD) is created, it would have a site specific monitoring program, including specific activities to be conducted to ensure safe geologic conditions within the RMDP area;
- Major landslides may require filling, regrading, stabilization, and significant debris removal from the tributaries and other stormwater control system features;
- Open space maintenance may be required after a significant flooding or fire event to protect property and human health;
- Revegetation efforts may be implemented for public safety, restoration, or aesthetic reasons;
- Slope stabilization beyond what was initially installed may be required, and if impacts to jurisdictional areas are to occur above what was originally described in the sub-notification, then a new sub-notification shall be filed;
- Sub-drain outfall maintenance may require that new sub-drains be excavated and installed, and existing sub-drains be exposed and repaired to alleviate unstable subsurface conditions related to excessive pore pressure; and
- Concrete V-ditches may need to be replaced when damaged. V-ditches are likely to be outside of jurisdictional areas, but in some cases may be integral to the jurisdictional feature, functioning as low flow or nuisance water management systems to alleviate surface soil saturation issues or to minimize vegetative growth where it is not wanted.

Storm Drain Outlets along SR-126

The Specific Plan calls for improvements to several existing roadways, including SR-126, Magic Mountain Parkway, Potrero Valley Road, Commerce Center Drive, Chiquito Canyon Road, San Martinez Grande Road, and Pico Canyon Road. Several storm drain outlets would be extended as a function of the SR-126 widening and/or utility corridor construction, which would impact RMDP jurisdiction areas. A 10-foot-wide by 75-foot-long pilot channel may be graded from the end of each of the outlet riprap aprons towards the riverbed to promote positive drainage.

Recreational Facilities

The Specific Plan Master Trails Plan (Plan) encompasses a comprehensive system of bicycle, pedestrian, and equestrian trails that would facilitate movement throughout the RMDP area. The Plan also provides potential connections to regional trail systems within the Santa Clarita Valley. Trails are a key component of the recreation element of the approved Specific Plan and provide public access to open space within the Specific Plan area. Approximately 20 trail crossings and 8 viewing platforms are included in or adjacent to the Santa Clara River and its drainages within the RMDP area, many of them unimproved within the channel bed. The precise location of trails and proposed trail crossings would be defined by final tract maps that implement the Specific Plan. As previously discussed, trails may also include separate bridge structures adjacent to

SR-126 crossings of San Martinez Canyon, Chiquito Canyon, and Castaic Creek, as well as north-south equestrian trails at Chiquito Canyon and Castaic Creek Bridges. Other trail crossings would be seasonal (i.e., no structural stream crossing) with appropriate signage to address public safety.

Trail facilities typically require as-needed maintenance in the form of vegetation removal on and adjacent to trails and platforms, removal of debris, and resurfacing and replacement of structures (e.g., fences, signs, kiosks, wooden structures).

Environmental Protection Design Features
The RMDP incorporates a variety of design features that minimize impacts to riparian resources. These features include avoidance, minimization, and restoration of riparian habitat, and enhancement activities.

Restoration Design Features
Riparian resources along the Santa Clara River that are impacted by the RMDP would require restoration. The primary objective of restoration efforts would be to enhance habitat quality and values within the RMDP area. Habitat restoration activities that would be implemented in conjunction with the RMDP include revegetation of native plant communities on candidate sites contiguous to existing riparian habitats. Site restoration also would include the maintenance of revegetation sites, including the control of non-native plants and irrigation system maintenance. Site restoration may include the use of herbicides.

Monitoring of the restoration sites would be conducted to evaluate the success of revegetation efforts. Contingency plans and appropriate remedial measures to be implemented should habitat restoration objectives not be achieved would also be included in proposed habitat restoration plans.

Revegetation plans would be developed and submitted to Corps and CDFG in accordance with the section 404 Permit and Master Lake/Streambed Alteration Agreement. In accordance with the Corps Mitigation and Monitoring Plan, the Comprehensive Mitigation Implementation Plan (CMIP), and the mitigation feasibility study the revegetation plan would provide details on where restoration sites are located and the appropriate restoration methods to be used at each location.

Enhancement Design Features
Habitat enhancement associated with the RMDP includes rehabilitation of areas of native habitat that have been disturbed by past activities (e.g., grazing, roads, oil and natural gas operations, etc.), or impacted by non-native plant species such as giant reed (*Arundo donax*) and tamarisk (*Tamarix* spp.).

Not all enhancement areas would necessarily require supplemental plantings of native species. Some areas may support conditions conducive for rapid natural re-establishment of native

species. The revegetation plans may incorporate means of enhancement to areas by reconditioning compacted soils, amending poor soil fertility, removing trash or flood debris, and by removing any unneeded ranch roads as a way of increasing habitat values. Removal of non-native species such as giant reed, tamarisk, tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*) to mitigate impacts would be subject to the management requirements described in the Specific Plan, Corps section 404 Permit, the CDFG Master Lake/Streambed Alteration Agreement, and the RMDP.

Building Pads and Buried Storm Drains

The RMDP proposes that 18 drainages within the RMDP area be graded to accommodate pads for residential and commercial buildings and that these flows be conveyed by buried storm drains varying in diameter from 30 to 144 inches. In total, approximately 60,010 linear feet of existing drainage channel would be converted to buried storm drains. Drainages converted to storm drains would occur in Homestead Canyon, Off-Haul Canyon, Chiquito Canyon (tributaries to Chiquito Canyon mainstem), Mid-Martinez Canyon, Humble Canyon (tributary to Humble Canyon mainstem), Lion Canyon (portions of the mainstem, east, and west forks), Exxon Canyon, Agricultural Ditch, Unnamed B, Unnamed C, Unnamed D, Dead-End Canyon, Magic Mountain Canyon, Middle Canyon, Long Canyon (upstream portion of the mainstem) and the upstream, intermittent portion of the Potrero Canyon. Drainages proposed for conversion to buried storm drains are described in greater detail and depicted graphically in Section 3.4.3 of the RMDP-SCP EIS/EIR, incorporated here by reference, and included as Appendix A of the biological assessment (URS 2010).

Background on High Country Special Management Area **and Salt Creek Reserve Area Dedication**

The RMDP outlines special conservation provisions for the California condor within the over 5,700-acre High Country Special Management Area (SMA) and Salt Creek open space areas (the Reserve). The Reserve would be dedicated in fee to the Newhall Ranch High Country Recreation and Conservation Authority, a joint powers authority (JPA) comprised of the County of Los Angeles, the Santa Monica Mountains Conservancy, and the City of Santa Clarita. The phasing of dedication to the JPA would take place with the issuance of the 2,000th, 6,000th, and 11,000th residential building permits during the build-out of Newhall Ranch; however, resource management within the Reserve would be initiated when the first residential building permit is issued by the County to begin construction. The resource management activities outlined in the RDMP would be funded through a non-wasting endowment by the Newhall to the Natural Lands Management Organization (NLMO) for implementation. The NLMO would appoint a Reserve Manager, who would be responsible for implementing all of the measures outlined in the RMDP. Also, the NLMO Reserve Manager would be an official member of the JPA to provide input on resource management within the Reserve. The CDFG would have input on the management of the reserve and approval over any management plans. Because the conservation goals of the CDFG are similar to those of the Service, we believe its approval of management plans would be sufficient for our purposes.

Condor Mitigation and Management Activities
As part of implementing the RMDP under the Newhall Ranch Specific Plan, mitigation measures to enhance the natural habitat in the Reserve (e.g. oak woodlands, savannahs, grasslands, etc.) would be undertaken to improve the overall productivity (e.g., more habitat for deer, improvements to increase populations of other native plants and wildlife, etc.). The Reserve Manager would coordinate all cattle/livestock management activities with the Service to ensure consistency with the Condor Recovery Team's ongoing condor management program. In conjunction with the Reserve Manager's coordination with the Service, the Condor Recovery Team would be provided with access to the Reserve areas to conduct scientific research and to implement necessary condor-specific management and monitoring activities to support overall condor productivity.

The Final Joint Environmental Impact Statement and Environmental Impact Report (Corps and CDFG 2010) includes mitigation measures that would reduce the RMDP's impacts on biological resources, including 80 measures previously adopted by the County of Los Angeles during the Specific Plan approval process and an additional 89 measures proposed by the Corps and CDFG. The 80 mitigation measures identified in the Newhall Ranch Specific Plan Program Environmental Impact Report for biological resources (measures SP-4.6-1 through SP-4.6-80) are included below in Appendix B of the biological assessment (URS 2010). The 89 additional mitigation measures (BIO-1 through BIO-89) developed for the Final Joint Environmental Impact Statement and Environmental Impact Report (Corps and CDFG 2010) are also included in Appendix B of the biological assessment (URS 2010). These additional measures are consistent with and supplement those mitigation measures listed in the previously certified Newhall Ranch Specific Plan Program Environmental Impact Report. The mitigation measures described in Appendix B of the RMDP biological assessment are incorporated here by reference (URS 2010).

ANALYTICAL FRAMEWORK FOR JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Jeopardy Determination

The jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the range-wide conditions of the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback, the factors responsible for those conditions, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the conditions of the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback in the action area, the factors responsible for those conditions, and the relationship of the action area to the survival and recovery of these species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California

gnatcatcher, arroyo toad, and unarmored threespine stickleback; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback,.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of the survival and the recovery of the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback in the wild.

Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the range-wide condition of designated critical habitat for the least Bell's vireo and arroyo toad in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that would influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future non-Federal activities in the action area on the PCEs and how that would influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed federal action on the critical habitat of the least Bell's vireo and arroyo toad are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat (both by unit and range-wide) would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the least Bell's vireo and arroyo toad.

STATUS OF THE SPECIES

Least Bell's Vireo

The least Bell's vireo was federally listed as endangered on May 2, 1986 (51 FR 16474) and critical habitat was designated for the subspecies on February 2, 1994 (59 FR 4845). A draft recovery plan was completed in 1998 (Service 1998); no final plan has been published. The Service completed a 5-year review for the least Bell's vireo in September 2006 in which we indicated that, due to new information on the species and an improved understanding of ongoing recovery actions to reduce threats, the recovery goals and strategies should be modified and refined. In addition, we recommended that the least Bell's vireo should be downlisted from endangered status to threatened status because of a 10-fold increase in population size since its listing in 1986, expansion of locations with breeding least Bell's vireo throughout southern California, and conservation and management of suitable breeding habitat throughout its range (Service 2006). Additional information on the least Bell's vireo may be found in Wilbur (1980), Garrett and Dunn (1981), Zembal et al. (1985), Miner (1989), Pike and Hays (1992), and Service (1998).

The least Bell's vireo is a small, migratory songbird that nests and forages almost exclusively in riparian woodland habitats. The least Bell's vireo is in the family Vireonidae and is one of four subspecies of Bell's vireo (*Vireo bellii*) that have been recognized (American Ornithological Union (AOU) 1998), with each subspecies isolated from one another throughout the year (Hamilton 1962; Service 1998). They are site-tenacious across breeding seasons, highly territorial, and almost exclusively insectivorous. Least Bell's vireos are obligate riparian breeders, typically inhabiting structurally diverse woodlands along watercourses that feature dense cover within 3 to 6 feet of the ground and a dense, stratified canopy (Goldwasser 1981; Salata 1983; Gray and Greaves 1984; Service 1998). The understory within this riparian habitat is typically dominated by mulefat (*Baccharis salicifolia*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversiloba*), sandbar willow (*Salix hindsiana*), young individuals of other willow species, and several perennial species (Service 1998). Important canopy species include mature arroyo willows (*S. lasiolepis*) and black willows (*S. gooddingii*), and occasional cottonwoods (*Populus* spp.), western sycamore (*Platanus racemosa*), or coast live oak (*Quercus agrifolia*). Least Bell's vireos primarily forage and nest in riparian habitat, but they may also use adjoining upland scrub habitat (Salata 1983; Kus and Miner 1989).

Least Bell's vireos primarily feed on invertebrates, especially lepidopteran larvae, within willow stands or associated riparian vegetation (Miner 1989; Brown 1993). Least Bell's vireos occasionally forage in nonriparian vegetation such as coastal sage scrub, chaparral, and oak woodlands, although foraging in these other habitats usually occurs within 100 feet of the edge of riparian vegetation (Salata 1983; Gray and Greaves 1984; Kus and Miner 1989). Least Bell's vireo feeding behavior largely consists of gleaning prey from leaves or woody surfaces while perched or hovering, and less frequently by capturing prey by aerial pursuit (Salata 1983; Miner 1989). Least Bell's vireos concentrate most of their foraging between 0 to 20 feet above ground level (Salata 1983; Miner 1989).

Least Bell's vireos generally arrive in southern California breeding areas by mid-March to early April, with males arriving before females and older birds arriving before first-year breeders (Service 1998). Least Bell's vireos generally remain on the breeding grounds until late September, although some post-breeding migration may begin as early as late July (Service 1998). Male least Bell's vireos establish and defend breeding territories through singing and physically chasing intruders (Barlow 1962; Beck 1996; Service 1998). Although territories typically range in size from 0.5 to 7.5 acres (Service 1998), no relationship appears to exist between territory size and various measures of territory quality (Newman 1992).

Nest building commences a few days after pair formation, with the female selecting a nest-site location and both sexes constructing the nest (Pitelka and Koestner 1942; Barlow 1962; Service 1998). Nests are typically suspended in forked branches within 3 feet above the ground with no clear preference for any particular plant species as the nest host (Nolan 1960; Barlow 1962; Gray and Greaves 1984; Service 1998). Typically 3 or 4 eggs are laid on successive days shortly after nest construction (Service 1998). The eggs are incubated by both parents for about 14 days with the young remaining in the nest for another 10 to 12 days (Pitelka and Koestner 1942; Nolan 1960; Barlow 1962). Each nest appears to be used only once with new nests constructed for each nesting attempt (Greaves 1987). Least Bell's vireos may attempt up to five nests within a breeding season, but they are typically limited to one or two successful nests within a given breeding season (Service 1998).

Multiple long-term monitoring studies indicate that approximately 59 percent of nests successfully produce fledglings, although on average only 1.8 chicks fledge per nest (Service 1998). Although least Bell's vireo nests appear to be more accessible to terrestrial predators because of their relatively low placement (Franzreb 1989), western scrub-jays (*Aphelocoma californica*) have been documented to account for the majority of documented depredation events (Peterson 2002; Peterson et al. 2004); depredation by jays and other avian predators may have selected for relatively low nest placement (Ferree 2002). Predation rates can exceed 60 percent of the least Bell's vireo nests in a given area within a year (Kus 1999), but typical nest predation rates average around 30 percent (Franzreb 1989), which is comparable to predation rates for other North American passerines (Martin and Clobert 1996; Grishaver et al. 1998; Ferree 2002).

Nest parasitism by cowbirds is another major source of failure for least Bell's vireo nests (Franzreb 1989; Service 1998; Kus 1999, 2002; Griffith and Griffith 2000; Sharp 2002); nests that are parasitized are either abandoned or fledge cowbird chicks rather than least Bell's vireos. It is believed that cowbirds did not historically occur within the least Bell's vireo's range, and therefore least Bell's vireos have not evolved adequate defenses to avoid loss of productivity due to parasitism (Franzreb 1989; Kus 2002). Parasitism of least Bell's vireo nests may exceed 42 percent in some locations (Kus 1999), but extensive cowbird trapping and focused nest monitoring can substantially reduce parasitism or its effects (Franzreb 1989; Service 1998; Griffith and Griffith 2000; Kus 2002).

Fledgling least Bell's vireos expand their dispersal distances from about 35 feet the first day to about 200 feet several weeks after fledging (Hensley 1950; Nolan 1960). This distance has been shown to increase to at least 1 mile prior to their first fall migration (Gray and Greaves 1984). Banding records indicate that while most first-year breeding least Bell's vireos return to their natal drainage after winter migration, some disperse considerable distances to other breeding locations (Greaves and Labinger 1997; Service 1998; Kus and Beck 1998). Movement by least Bell's vireos between drainages within San Diego County is not uncommon (Kus and Beck 1998). Additionally, several least Bell's vireos banded as nestlings in San Diego County have been resighted as breeding adults in Ventura County, and the opposite movement from Ventura to San Diego has also been observed (Greaves and Labinger 1997). The maximum dispersal distance currently documented is approximately 130 miles (Service 1998), but this is probably an underestimate due to the limited number of least Bell's vireos that are banded and insufficient re-sighting efforts. Although movement between sites by older birds may occur, site fidelity by least Bell's vireos after the first breeding season is generally high, and most dispersal between sites occurs between the time that least Bell's vireos fledge from their nest and their first breeding season (Service 1998).

The least Bell's vireo historically occupied willow riparian habitats from Tehama County, in northern California, southward to northwestern Baja California, Mexico, and as far east as Owens Valley, Death Valley, and the Mojave River (Grinnell and Miller 1944; Service 1998). Although originally considered to be abundant locally, regional declines of this subspecies were noticeable by the 1940s (Grinnell and Miller 1944), and the least Bell's vireo was believed to have been extirpated from California's Central Valley by the early 1980s (Franzreb 1989). Except for a few outlying pairs, the least Bell's vireo is currently restricted to southern California south of the Tehachapi Mountains and northwestern Baja California (Wilbur 1980; Garrett and Dunn 1981; Franzreb 1989; U.S. Geological Survey (USGS) 2002). The largest current concentrations of least Bell's vireos are in San Diego County along the Santa Margarita River on Camp Pendleton and in Riverside County at the Prado flood control basin (Service 2006).

Historically, the San Joaquin and Sacramento Valleys were considered to be the center of the least Bell's vireo's breeding range (60 to 80 percent of the historic population; 51 FR 16474), but the least Bell's vireo has not yet meaningfully re-colonized those areas. In 2005 and 2006, the first breeding pair of least Bell's vireos detected in the San Joaquin Valley since the listing of the this species successfully bred at the San Joaquin National Wildlife Refuge in Stanislaus County (Service 2006). There have been no sightings of least Bell's vireos in the Sacramento Valley since prior to the listing, and it is unlikely that any breeding least Bell's vireos have occurred within recent years in the Sacramento Valley (Service 2006).

Greater than 99 percent of the remaining least Bell's vireos were concentrated in southern California (Santa Barbara County and southward) at the time of the listing in 1986 (51 FR 16474), with San Diego County containing 77 percent of the population. Greater than 99 percent still remain in southern California, although the populations are now more evenly distributed in southern California with 54 percent of the total population occurring in San Diego County and

30 percent of the population occurring in Riverside County (Service 2006); however, there has been only a slight shift northward in the species' overall distribution. Thus, despite a significant increase in overall population numbers, the population remains restricted to the southern portion of its historic range (Service 2006).

Causes for decline of the least Bell's vireo included destruction or degradation of habitat, river channelization, water diversions, lowered water tables, gravel mining, agricultural development, and cowbird parasitism (Service 1986, 1994, 1998). Habitat losses had fragmented most remaining populations into small, disjunct, widely dispersed subpopulations (Franzreb 1989). Habitat fragmentation negatively affects abundance and distribution of neotropical migratory songbirds, in part by increasing incidence of nest predation and parasitism (Whitcomb et al. 1981; Small and Hunter 1988; Yahner and DeLong 1992; Sharp 2002; Peterson 2002). Least Bell's vireos nesting in areas containing a high proportion of degraded habitat have lower productivity (e.g., hatching success) than those in areas of high quality riparian woodland (Pike and Hays 1992).

The least Bell's vireo population in the U.S. has increased 10-fold since its listing in 1986, from 291 to 2,968 known territories (Service 2006). The population has grown during each 5-year period since the original listing, although the rate of increase has slowed over the last 10 years. Population growth has been greatest in San Diego County and Riverside County, with lesser but significant increases in Orange County, Ventura County, San Bernardino County, and Los Angeles County. The population in Santa Barbara County has declined since the listing in 1986, although it is uncertain whether this population was historically significant. Kern, Monterey, San Benito, and Stanislaus counties have had a few isolated individuals and/or breeding pairs since the original listing, but these counties have not supported any sustained populations (Service 2006).

At the time of the listing, loss of habitat due to agricultural practices, urbanization, and exotic plant invasion was identified as a major threat to least Bell's vireo populations. Since the listing of the least Bell's vireo, destruction and modification of riparian habitat within its current range has been curtailed significantly, primarily as a consequence of protections provided by the original listing in 1986 (51 FR 16474), the subsequent designation of critical habitat in 1994 (59 FR 4845), and other Federal and State regulatory processes. Other efforts not driven by regulatory processes have also promoted increased conservation and restoration of riparian habitat since the listing of the least Bell's vireo in 1986 (Service 2006).

Agriculture and grazing continue to threaten riparian habitat within the larger historic range, particularly the Salinas, San Joaquin, and Sacramento valleys (Service 1998). Urbanization appears to have displaced former agriculture and grazing operations in many areas within southern California, thereby indirectly reducing riparian habitat degradation caused by these activities. On the other hand, occupied least Bell's vireo habitat that is adjacent to highly urbanized areas or within major river systems continues to be impacted by flood control and

water impoundment projects and may be subject to ongoing and future habitat loss or degradation (Service 2006).

Several large, regional Habitat Conservation Plans in southern California have addressed the effects of urban development on this species. These plans are expected to provide long-term protection of core occurrences of least Bell's vireos in western Riverside, Orange, and San Diego counties. Compliance-driven and voluntary riparian restoration activities throughout the historic range may have contributed to an increase in riparian habitat since the listing of the least Bell's vireo (Service 2006), although this cannot be established without a thorough evaluation of riparian habitat within California. Starting in 2007, the Riparian Habitat Joint Venture ("RHJV"; a cooperative association of Federal, State, and private organizations) began systematically mapping existing riparian habitat in California starting (RHJV 2006), which should provide a more objective measure of ongoing changes to riparian habitat in California.

Giant reed removal has also been initiated within several watersheds within southern California (Natural Resources Conservation Service (NRCS) 2006; Service 2006). In general, giant reed removal has been effective but will require continued annual efforts to achieve local eradications and address new invasions. Although control of giant reed has made great progress since the original listing of the least Bell's vireo, invasions by other exotic plants (e.g., Tamarix species, perennial pepperweed (*Lepidium latifolium*)) continue to degrade existing riparian habitat (Kus and Beck 1998; Hoffman and Zembal 2006).

The 1986 listing rule identified brood parasitism by cowbirds as a substantial threat to the least Bell's vireo, and it remains the most significant threat to the recovery of the least Bell's vireo (Service 2006). Cowbird trapping has proven a successful tool to halt least Bell's vireo population declines over the short term within a limited area, but Kus and Whitfield (2005) have argued that trapping may not be the best method for long-term recovery of the least Bell's vireo because maintaining cowbird populations at low levels may not allow the least Bell's vireo to evolve resistance to cowbird parasitism. The issue of cowbird trapping remains unclear as to the best way to manage this threat over the long term, and additional research is needed to determine whether there are any alternatives to the intensive cowbird trapping programs currently being implemented (Service 2006).

Critical Habitat for the Least Bell's Vireo

Critical habitat for the least Bell's vireo encompasses about 38,000 acres at 10 locations in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. Primary constituent elements that support feeding, nesting, and sheltering are essential to the conservation of the least Bell's vireo and include riparian woodland vegetation that generally contains both canopy and shrub layers and some associated upland habitats (59 FR 4845). The 1994 critical habitat rule for least Bell's vireo states that the goal of the designation is the conservation of known populations of least Bell's vireo. This was to be accomplished through designation of critical habitat encompassing approximately 75 percent of the nesting least Bell's vireo locations

known at the time of listing, and the review of impacts to critical habitat through the section 7 process.

Draft Recovery Plan for the Least Bell's vireo
The 1998 draft recovery plan for the least Bell's vireo states that the goal of recovery efforts is the reclassification of the subspecies from endangered to threatened and, ultimately, delisting of the subspecies. The draft plan states that reclassification to threatened status may be considered when there are stable or increasing population/metapopulations of least Bell's vireos for a period of 5 consecutive years, each consisting of several hundred or more breeding pairs at the following sites: Tijuana River, Dalzura/Jamul Creek/Otay River, Sweetwater River, San Diego River, San Luis Rey River, Camp Pendleton/Santa Margarita River, Santa Ana River, an Orange County/Los Angeles County metapopulation, Santa River, Santa Ynez River, and an Anza Borrego Desert metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

The draft plan states that delisting of the least Bell's vireo may be considered when the subspecies meets the criterion for downlisting and there are stable or increasing least Bell's vireo population/metapopulations for a period of 5 consecutive years established at the following currently unoccupied areas of the species' historical range: Salinas River, a San Joaquin Valley metapopulation, and a Sacramento Valley metapopulation. The draft plan states that each of these populations and metapopulations should be protected and managed.

Lastly, the draft plan states that threats to the least Bell's vireo at the aforementioned sites should be reduced or eliminated so that these populations/metapopulations are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat occupied by the least Bell's vireos.

The draft recovery plan describes a strategy for reclassification, recovery, and delisting. Instrumental to this strategy is securing and managing riparian habitat within the historical breeding range of the least Bell's vireo, annual monitoring and rangewide surveys, and research activities necessary to monitor and guide the recovery effort.

Relationship of Recovery Units, Critical Habitat Units, and Other Conservation Measures
The 10 least Bell's vireo critical habitat units have defined boundaries and cover specific areas that overlap with 10 of the 14 population/metapopulation (recovery) units identified in the draft recovery plan. Table 1 depicts the relationship among the 14 recovery units and the critical habitat units for least Bell's vireo.

Table 1.

Recovery Units	Critical Habitat Units	County	Size of Critical Habitat Unit (acres)[1]
Tijuana River	Tijuana River	San Diego	880
Dulzura Creek/Jamul Creek/Otay River	Jamul-Dulzura Creeks	San Diego	642
Sweetwater River	Sweetwater River	San Diego	771
San Diego River	San Diego River	San Diego	929
San Luis Rey River	San Luis Rey River	San Diego	7,286
Camp Pendleton/Santa Margarita River	Santa Margarita River	San Diego	2,278
Santa Ana River	Santa Ana River	San Bernardino and Riverside	9,900
An Orange County/Los Angeles County metapopulation	----------	----------	
Santa Clara River	Santa Clara River	Los Angeles and Ventura	4,411
Santa Ynez River	Santa Ynez River	Santa Barbara	9,247
Anza Borrego Desert metapopulation	Coyote Creek	San Diego	630
Salinas Valley	----------	----------	
A San Joaquin Valley metapopulation	----------	----------	
A Sacramento Valley metapopulation.	----------	----------	
Total			36,974

[1] Values in table do not sum to the 38,000 acres estimated in the critical habitat designation, but are based on the critical habitat GIS coverage created by the Service for the units identified in the critical habitat designation.

The draft recovery plan also describes other conservation efforts for the least Bell's vireo (Service 1998). The Santa Clara River Enhancement and Management Plan is a joint effort of the Service, the State Coastal Conservancy, and Ventura and Los Angeles counties to develop a long-range conservation plan for the Santa Clara River that includes recovery actions for the least Bell's vireo. Other conservation efforts include brown-head cowbird control programs being funded by the Service, Caltrans, the Corps, the International Boundary and Water Commission, and the Marine Corps Base, Camp Pendleton. Nest monitoring and research is also being conducted in conjunction with the cowbird controls, which is important for evaluating the effectiveness of cowbird trapping and removal and providing guidance for their improvement. Nest monitoring also provides valuable long-term reproductive data and facilitates banding of juveniles and adults for ongoing studies of demography, dispersal, and wintering site selection. Finally, habitat creation and restoration efforts implemented to offset loss and degradation of riparian efforts are being undertaken and monitored.

Southwestern Willow Flycatcher

The southwestern willow flycatcher was federally listed as endangered on February 27, 1995 (60 FR 10694) and critical habitat was designated for the subspecies on October 19, 2005 (70 FR 60886). Critical habitat in California is designated in Kern, Santa Barbara, San Bernardino, and San Diego counties; critical habitat is not designated in the action area and it will not be discussed further in this biological opinion. The final recovery plan for the subspecies was completed in August 2002 (Service 2002). The action 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 action area, has been identified in the recovery plan as a Management Unit where recovery actions should be focused (Service 2002).

The southwestern willow flycatcher breeds in southern California (north to the Santa Ynez River, Kern River, and Independence on the Owens River), southern Nevada, southern Utah, Arizona, New Mexico, and extreme western Texas. All subspecies of the willow flycatcher are completely migratory. The species as a whole winters from southern Mexico south through Central America to Panama and western Venezuela. Subspecies *extimus* has been collected in winter in Guatemala, El Salvador, Honduras, and Costa Rica (Unitt 1987).

Unitt (1987) concluded that the southwestern willow flycatcher was once fairly common in the Los Angeles Basin, where habitat is virtually absent now. Approximately 616 acres of riparian habitat has regenerated along the South Fork Kern River since the early 1980s, but fluctuations in number of territories in this area has made it difficult to determine a trend in the population for this area (Whitfield et al. 1999). Downstream from the South Fork Kern River, willow flycatchers (unknown subspecies) were common breeders in the early 1900s, but today virtually no riparian habitat remains. Outside of the Kern River, southwestern willow flycatcher populations are present along the Owens, San Luis Rey, and Santa Margarita (Camp Pendleton) Rivers. Changes in land use along the San Luis Rey River have improved habitat quality and extent, which has resulted in an increase in the number of territorial southwestern willow flycatcher males from 12 in the late 1980s (Unitt 1987) to more than 40 in 1999 (Kus et al. 1999). In contrast, the populations on Camp Pendleton have remained fairly constant for the past two decades despite apparently suitable habitat to support population expansion. The remaining southwestern willow flycatcher populations in southern California, most of which number fewer than five territories, occur at scattered sites along drainages that have changed little in the past 15 years.

The southwestern willow flycatcher breeds only in riparian woodland, typically adjacent to or over water. Surface water or saturated soil is usually present in or adjacent to nesting sites during at least the initial portion of the nesting period (Muiznieks et al. 1994, Tibbits et al. 1994). Riparian woodland used by willow flycatchers typically has a canopy and an understory of shrubs or saplings. Native willows dominate the habitat commonly represented in current and historical records.

Southwestern willow flycatchers do nest in some riparian habitats containing and even dominated by tamarisk (McKernan and Braden 1999, Paradzick et al. 2000). In terms of southwestern willow flycatcher productivity, the suitability of tamarisk dominated habitats is not known. Southwestern willow flycatcher productivity in some sites dominated by non-native vegetation is lower than in some native-dominated habitats (Sferra et al. 1997, Sogge et al. 1997). The reverse is also true, however, within some tamarisk-dominated habitats where

southwestern willow flycatcher productivity is similar or higher than nearby native-dominated sites (McKernan and Braden 1999, Paradzick et al. 1999).

The southwestern willow flycatcher is a diurnal insectivore, catching its prey on the wing usually in the middle story of riparian woodland. Males maintain and advertise a territory by singing to attract females. There is little information on the factors a southwestern willow flycatcher female uses to select a mate, though it may be related to some factor of habitat quality or potential quality of the male (Service 2002). Territorial defense begins immediately after spring arrival. Females occasionally sing, apparently when stimulated by territorial disputes (Sogge et al. 1997). Male southwestern willow flycatchers sing most persistently early in the breeding season, but song rate declines as the season progresses, particularly once the male finds a mate and nesting efforts begin (Finch et al. 2000). Their response to taped playback of songs during surveys has also been known to decrease as the nesting season progresses. Mapped breeding territory sizes are 0.15 to 0.5 acre on the Colorado River (Sogge et al. 1997), 0.5 to 1.25 acres along the Verde River, Arizona (Sogge 1995), and 0.35 to 5.7 acres along the Kern River, California (Whitfield and Enos 1996).

Nests are initiated usually within one week of pair formation, 10 to 14 days after spring arrival. Building nests takes 3 to 8 days. In historical egg collections from southern California, 86 percent of nests were in *Salix* spp. (willow), 4 percent in *Urtica dioica* (stinging nettles), and 10 percent in other plants (Unitt 1987). Females typically lay one egg per day, until the nest contains three to four eggs. Incubation begins after the last egg is laid, and lasts 12 to 13 days (Service 2002). For the southwestern willow flycatcher, incubation generally lasts 12 to 15 days from the date that the last egg was laid. During incubation, females spend approximately 50 percent of the day attending (incubating or shading) the eggs and incubate throughout the night. Incubation and shading bouts can last from less than 1 to more than 60 minutes (Finch et al. 2000).

Southwestern willow flycatcher young usually leave the nest 12 to 15 days after hatching. During the brooding period, the young are cared for by both the male and female. Feeding trips during the peak of this period can reach 30 trips per hour during days 5 to 10 (Finch et al. 2000). Fledglings stay close to the nest and each other for 3 to 5 days, and may repeatedly return to and leave the nest during this period (Spencer et al. 1996).

Southwestern willow flycatchers typically arrive on breeding grounds from late April to early June (Maynard 1995, Skaggs 1996, Sferra et al. 1997). Evidence gathered during multi-year studies of color-banded populations show that although most southwestern willow flycatchers return to former breeding areas, they regularly move among sites within and between years (Netter et al. 1998). From 1997 to 2000, 66 to 78 percent of southwestern willow flycatchers returned to the same breeding site (Luff et al. 2000). Within drainage movements are more common than between drainage movements.

The decline of the southwestern willow flycatcher is attributed to numerous factors, including nest depredation and brood parasitism by the brown-headed cowbird. However, large scale loss of southwestern wetlands, particularly cottonwood-willow riparian habitat, is the principal reason for the southwestern willow flycatcher's current status. Habitat loss is a result of urban and agricultural development, water diversion and impoundment, livestock grazing, and hydrological changes attributable to these and other land uses (60 FR 10694). In some cases, willow flycatchers are faced with situations that force movement, such as when catastrophic habitat loss occurs from fire or flood. Several such cases have been documented, with some of the resident willow flycatchers moving to remaining habitat within the breeding site, some moving to other sites 1.2 to 16.8 miles away (Paxton et al. 1997, Owen and Sogge 1997), and others disappearing without being seen again. For a discussion on the status of riparian habitat, see the status of the least Bell's vireo above.

Recovery Plan for the Southwestern Willow Flycatcher

The 2002 final recovery plan for the southwestern willow flycatcher states that the goal of recovery efforts is the reclassification of the subspecies from endangered to threatened and, ultimately, delisting of the subspecies. The plan states that reclassification to threatened status may be considered when either of the following criteria have been met:

Criterion A: Increase the total known population to a minimum of 1,950 territories (equating to approximately 3,900 individuals), geographically distributed to allow proper functioning as metapopulations, so that the southwestern willow flycatcher is no longer in danger of extinction. For reclassification to threatened status, these prescribed numbers and distributions must be reached as minimum, and maintained over a 5 year period.

Criterion B: Increase the total known populations to a minimum of 1,500 territories (equating to approximately 3,000 individuals), geographically distributed among Management Units and Recovery Units, so that the southwestern willow flycatcher is no longer in danger of extinction. Recovery Units are large watershed or hydrologic areas, while Management Units are a subset of the Recovery units and encompass local drainages and distinct geographic features. For reclassification to threatened status, these prescribed numbers and distributions must be reached as a minimum, and maintained over a 3 year period, and the habitats supporting this subspecies must be protected from threats and loss.

The plan states that the southwestern willow flycatcher may be removed from the list of threatened and endangered species when both of the following criteria have been met:

Criterion 1: Meet and maintain, at a minimum, the population levels and geographic distribution specified under reclassification to threatened Criterion A.

Criterion 2: Provide protection from threats and create/secure sufficient habitat to assure maintenance of these populations and/or habitat over time. The sites containing southwestern willow flycatcher breeding groups, in sufficient number and distribution to warrant downlisting,

must be protected into foreseeable future through development and implementation of conservation management agreements (e.g., public land management planning process for Federal lands, habitat conservation plans (under Section 10 of the Act), conservation easements, and land acquisition agreements for private lands, and intergovernmental conservation agreements with Tribes). Prior to delisting, the Service must confirm that the agreements have been created and executed in such a way as to achieve their role in southwestern willow flycatcher recovery, and individual agreements for all areas within all Management Units (public, private, and Tribal) that are critical to metapopulation stability (including suitable, unoccupied habitat) must have demonstrated their effectiveness for a period of at least 5 years.

The recovery plan categorizes recovery actions into nine types: (1) increase and improve occupied, suitable, 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 southwestern willow flycatcher; and (9) track recovery progress.

California Condor

The California condor was listed as endangered on March 11, 1967 (32 FR 4001), and state listed as endangered on June 27, 1971. Critical habitat for the California condor was designated 9 years later on September 24, 1976 (41 FR 187), and consists of nine critical habitat units scattered throughout the California condor range in California totaling approximately 570,400 acres. The RMDP area is not within any of the designated critical habitat units; therefore, critical habitat will not be discussed further in this biological opinion, An experimental population listed as threatened under section 10(j) of the Act was introduced in Arizona in 1996. The California condor is a fully protected species under California law (see California Fish and Game Code, Section 5515 (b)(9)).

The California condor is a member of the family Cathartidae or New World vultures, a family of seven species, including the closely related Andean condor (*Vultur gryphus*) and the sympatric turkey vulture (*Cathartes aura*). Although the family has traditionally been placed in the Order Falconiformes, most contemporary taxonomists believe that New World vultures are more closely related to storks (Ligon 1967, Rea 1983, Sibley and Ahlquist 1990). California condors are among the largest flying birds in the world. Adults weigh approximately 17 to 22 pounds and have a wing span up to 9.5 feet. They are generally black, with prominent white underwing linings, with naked skin on the head and neck that ranges from gray to shades of yellow, red, and orange. Males and females cannot be distinguished by size or plumage characteristics.

California condors nest in various types of rock formations including crevices, overhung ledges, and potholes, and, more rarely, in cavities in giant sequoia trees (*Sequoiadendron giganteum giganteus*) (Snyder et al. 1986) and giant coast redwoods (*Sequoia sempervirens*) with cavities or broken out tops. California condor nest sites share the following characteristics: nest cavity ceiling height of at least 15 inches at the egg position; fairly level floors with some loose surface

substrate; unobstructed area around the nest for incubating adults; and short distance to an accessible landing point (Snyder et al. 1986).

All but one of the nest sites used between 1979 to 1986 were in a narrow belt of chaparral and coniferous forested mountains from central Santa Barbara County across northern and central Ventura County to northwestern Los Angeles County. The sites were located within a total area approximately 56 miles from west to east and only about 15 miles from north to south. The only nest outside this area was located in a giant sequoia in Tulare County in 1984. In 2006, released condors in the Big Sur area used a cavity in a giant coastal redwood, and since that time three additional nests have been located in cavities in coastal redwoods.

All recent California condor nest sites have been located on public lands within the Los Padres, Angeles, and Sequoia National Forests.

California condors are opportunistic scavengers, feeding only on the carcasses of dead animals. Typical foraging behavior includes long-distance reconnaissance flights, lengthy circling flights over a carcass, and occasionally hours of waiting at a roost or on the ground near a carcass. Prior to the arrival of Europeans, California condor food items within interior California probably included mule deer (*Odocoileus hemionus*), tule elk (*Cervus elaphus nannoides*), pronghorn antelope (*Antilocapra americana*), and smaller mammals. Along the Pacific shore the diet of the California condor has included whales, sea lions, and other marine species (Koford 1953, Emslie 1987, Service 1996). Koford (1953) estimated that 95 percent of the California condor diet after the arrival of European settlers consisted of cattle, domestic sheep, ground squirrels (*Spermophilus beecheyi*), mule deer, and horses.

Most California condor foraging occurs in open terrain of foothill grassland and oak savannah habitats because that is where the preferred food items may be located. While it has often been portrayed that California condors need wide open spaces in which to feed, they have been observed feeding under vegetation, including canyon bottoms where open areas for take-off and landing are easily accessible. The principal foraging regions used by California condors from the late 1970s to 1987 were the foothills bordering the southern San Joaquin Valley and axillary valleys in San Luis Obispo, Santa Barbara, Kern, and Tulare counties. After 1982, most observations of feeding by the small remaining wild population of California condors occurred in the Elkhorn Hills-Cuyama Valley-Carrizo Plain complex, and in the foothills of the southern San Joaquin Valley, extending north into Tulare County (Meretsky and Snyder 1992). The majority of important foraging areas were on private cattle-grazing lands.

Currently free-ranging California condors forage throughout the birds' present range, which extends from San Benito and Monterey counties in the north, south through Santa Barbara, Ventura, Kern, and Los Angeles counties, feeding naturally on cattle, sheep, pigs, and deer. Supplemental feeding is provided in specific locations to help facilitate the transition of newly released birds from captivity to the wild, to reduce the potential for birds coming into contact

with contaminated food in the form of lead bullet fragments, and to bait birds into trapping sites for lead testing and health checks.

Depending upon weather conditions and the hunger of the bird, a California condor may spend most of its time perched at a roost. California condors often use traditional roosting sites near important foraging grounds (Service 1996). Although California condors usually remain at roosts until mid-morning, and generally return in mid- to late afternoon, it is not unusual for a bird to stay perched throughout the day. While at a roost, California condors devote considerable time to preening and other maintenance activities. Roosting sites and nesting sites are susceptible to similar disturbance threats, and their preservation requires isolation from human intrusion. Cliffs and tall conifers, including snags, are generally utilized as roost sites in nesting areas. Although most roost sites are near nesting or foraging areas, scattered roost sites are located throughout the range.

California condors use topography and associated thermal weather patterns for flight. This is best illustrated by observations indicating that almost all flights by California condors, whether covering long distances or not, followed routes over the foothills and mountains bordering the southern San Joaquin Valley. Rarely do California condors pass directly over the flat, highly agricultural floor of the San Joaquin Valley and no California condors have ever been witnessed actually crossing over this Valley. Where flat, agricultural regions are much less extensive, such as the Cuyama Valley in Santa Barbara and San Luis Obispo counties, California, this species freely passed high above en route to foraging grounds. California condors are highly dependent on topography, which dictates prevailing wind patterns (Service 1996). The species is totally dependent on favorable wind conditions to move throughout its range, and long periods of inclement weather will keep birds immobile.

As mentioned above, climatic conditions change throughout the year across the landscape in southern California. Because the California condor is totally dependent on wind conditions for survival, favorable wind conditions that allow the bird to forage for food over a broad area are necessary. When wind conditions may not be favorable elsewhere, in the foothills of the San Joaquin Valley for example, they may be favorable over the Santa Susana Mountains. Therefore, California condor movements are, in part, dictated by favorable wind patterns.

During the Pleistocene era (10,000 to 100,000 years ago) the California condor ranged from British Columbia, Canada, to Baja California, Mexico, and through the southwest to Florida and north to New York State (one record). With the extinction of the large Pleistocene Era mammals, condors declined in range and numbers. Another large decline occurred when European settlers arrived on the West Coast, and accelerated during the gold rush of 1849. Condors were wantonly shot and poisoned, and eggs and adults were collected. By 1940, the condors' range was reduced to a horseshoe-shaped area in southern California that included the coastal mountain ranges of San Luis Obispo, Santa Barbara and Ventura counties; a portion of the Transverse Range in Kern and Los Angeles counties; and the Southern Sierras in Tulare County.

The California condor remains one of the world's rarest and most imperiled vertebrate species. The California condor declined over the past century to such a low level that only 22 individuals existed in 1982. The last free-flying California condors were captured by 1987 and brought into a captive breeding program.

The central purposes of the Endangered Species Act for the California condor, as for any listed species, are to provide for the survival and recovery of the condor in the wild and to conserve the ecosystem on which the condor depends. The most important recovery milestone for the California condor is to have wild adults fledging chicks into the wild. Recovery of the condor cannot rely upon captive-rearing because the goal is to have self-sustaining populations in the wild. Following several years of increasingly successful captive breeding, captive-produced California condors were first released back to the wild in southern California in early 1992. Additional releases have been made in the Ventana Wilderness area along California's central coast, Pinnacles National Monument, and in Baja California, Mexico. Under section 10(j) of the Act, an experimental population was also begun with releases in Arizona in 1996.

As of October 6, 2010, 100 California condors were free-flying in California, 20 in Baja California, and 75 in Arizona and Utah, with 26 awaiting release for all sites. Another 160 are in captivity. The first nesting activity by California condors released back into the wild occurred in 2001 in Lion Canyon above the Cuyama Valley in the Sierra Madre Mountains. Although this nesting attempt was ultimately unsuccessful, it marked the beginning of an increasingly successful pattern of reproduction in the wild by California condors (California condors also attempted to nest in Arizona in 2001). In 2002, three condor chicks were produced in the wild in California by re-introduced birds. Unfortunately, these three chicks perished prior to fledging. Two died due to ingestion of foreign materials (e.g., glass, bottle caps, etc.); the cause of death of the other chick is unknown, but the ingestion of foreign material cannot be ruled out. Another chick was produced in the wild in California in 2003, but again died before fledging due to the ingestion of foreign objects. Three chicks were produced in the wild in California in 2004. One died partly due to the ingestion of foreign objects, one was taken into captivity for rehabilitation after it broke a wing (and was released in the fall of 2007), and the third fledged successfully. Nesting activity has also been occurring in the Arizona population. The first California condor chick to successfully fledge in the wild since the 1980s occurred in the Grand Canyon in 2003. Eight chicks have survived to fledging since 2003 in Arizona.

In California, two chicks were produced in 2005. One was taken captive after it was revealed that the bird contained a large amount of micro-trash in its digestive tract and exhibited retarded feather growth (this bird was subsequently released into the wild in the fall of 2007), and the second chick died of a combination of West Nile Virus and micro-trash impaction. Additionally, a third egg was laid in the wild but was destroyed by predators before hatching. In 2006 four pairs attempted to breed. One chick fledged successfully, but only after being removed from the nest, flown to Los Angeles Zoo for emergency surgery to remove trash from an impacted ventriculus, and returned to the nest the following day. One chick died of unknown causes, and two eggs were lost during incubation to unknown causes. In 2007, field biologists set a goal for

100 percent fledging success in California, putting all available resources into the effort. Six pairs of condors produced eggs in 2007. Every nest was monitored intensively, and nest visits were made to each nest once a month during the nestling stage to monitor the health of the chick, inoculate chicks against West Nile Virus, and remove micro-trash from nests. Fertility of eggs was also checked. Two nests that contained infertile eggs were given fertile eggs from the captive breeding program so all pairs would have the opportunity to fledge chicks into the wild. The results for 2007 were six chicks fledged successfully. One subsequently died in the Ranch Fire of October when the fire raged through the Hopper Mountain National Wildlife Refuge and up Hopper Canyon, and one bird, in the Big Sur area, disappeared in early December. From 2008 through 2010 there have been 25 nesting attempts in California, which produced 15 chicks that have become integrated into the wild population.

Currently the most serious sources of human-related condor mortality are lead poisoning, shooting, collision with power lines, and the ingestion of small pieces of trash which, in combination with hair and other natural items, become compacted in the birds' digestive tract. In addition, two California condors have been shot and killed since 1999. One person was arrested in July 1992 for shooting at a California condor and another condor was shot and killed in Arizona in 1999. The second death, in California, occurred in 2003. This particular bird, AC-8, was the last wild female captured in 1986 and the first of the original wild birds to be released in 2000 back into the wild. She had spent 14 years in captivity as part of the captive breeding program. The bird was shot by a hunter in February 2003 (M. Hall, Refuge Manager, Hopper Mountain National Wildlife Refuge, pers. comm. 2004) on Tejon Ranch in the Tehachapi Mountains.

Post-mortem examinations performed on four wild dead California condors found between 1983 and 1986, indicated that three of the birds died from the effects of lead poisoning (Janssen et al. 1986, Wiemeyer et al. (1988) and one died of cyanide poisoning when a California condor triggered an M-44 cyanide gun set out for coyotes (Wiemeyer et al. 1988). High lead levels in the blood, resulting from the ingestion of fragments of lead bullets in shot mammal carcasses, may be a pervasive problem throughout the historical foraging range of the California condor. Wiemeyer et al. (1988) concluded that lead exposure was the major factor having an adverse impact on the wild California condor population from 1982 to 1986.

With the passage of AB 821, the Ridley-Tree Condor Preservation Act, signed by Governor Arnold Schwarzenegger in August 2007, lead ammunition was regulated within the present and historical range of the California condor. Theoretically, this should remove one of the major causes of mortality to California condors; ingestion of lead bullet fragments from large game carcasses. Additional rulings by the California Fish and Game Department expand the calibers of ammunition covered under the new regulation. Two federal installations, Fort Hunter Liggett and Camp Roberts in central California instituted non-lead ammunition hunting requirements in July of 2007, and the 275,000-acre private Tejon Ranch required non-lead ammunition in all of its hunting programs beginning on January 1, 2008.

Eleven of the California condors released since 1992 were killed in collisions with power lines. At least two deaths from collisions with manmade objects, including power lines, were known historically (Koford 1953). Condors are given power pole aversion training prior to release, which may deter birds from sitting on power poles, but it may have little effect on actual collisions with powerlines. Condors have not evolved to be looking directly ahead for small thin nearly invisible wires stretched across their flight path. Thus powerlines, particularly small distribution lines, have been a serious source of mortality for free-flying condors.

In an attempt to open up other foraging areas to the north to compensate for lost foraging habitat within the species' recent historic foraging range in the south, the Service put effort into attempting to move all California condor feeding activity 45 miles to the northwest of the Hopper Mountain National Wildlife Refuge, to Bittercreek National Wildlife Refuge. In July of 2007, all feeding sites at Hopper Mountain National Wildlife Refuge were shut down and food was only provided at the Bittercreek site. All California condors in the southern California population now must fly 45 miles from the Hopper Mountain Refuge to Bittercreek to obtain food, thus lessening their presence in the Hopper/Sespe area during the summer and fall months and opening up potential foraging areas to the north/northwest. Additional feeding sites have been established on Wind Wolves Preserve in the San Joaquin Valley foothills, west of Interstate 5, also to the north of Hopper Refuge, and within historic foraging habitat. California condors are now also taking advantage of naturally occurring food in the form of dead cattle, deer and pigs.

The major threat to condor recovery still remains lead poisoning. Collisions with powerlines and ingestion of micro-trash seem to have been significantly reduced. Other threats include the cumulative impacts of habitat loss, the continued possibilities of birds being shot, and other possible contaminants in their food supply.

Recovery Plan for the California Condor

The 1996 final recovery plan for the California condor states that the goal of recovery efforts is the reclassification of the species from endangered to threatened. Removing the California condor from the list of threatened and endangered species has been deferred to a future recovery plan. The recovery plan states that reclassification to threatened status may be considered when, at a minimum, there are at least two non-captive populations that do not require maintenance and one captive population. These populations (1) must each number at least 150 individuals, (2) must each contain at least 15 breeding pairs and (3) be reproductively self-sustaining and have a positive rate of population growth. In addition, the non-captive populations (4) must be spatially disjunct and non-interacting, and (5) must contain individuals descended from each of the 14 founders.

The recovery plan describes a strategy for reclassification, which includes the following actions: (1) establish a captive breeding program to preserve the gene pool; (2) reintroduce California condors to the wild; (3) minimize mortality factors in the natural environment; (4) maintain habitat for condor recovery; and (5) implement condor information and education programs.

Arroyo Toad

The arroyo toad was listed as endangered on December 16, 1994 (59 FR 64589). Critical habitat for the arroyo toad was designated on April 13, 2005 (70 FR 19562). The critical habitat designation did not include the action area. On July 20, 2007, the Service announced it would review the critical habitat designation after questions were raised about the integrity of scientific information used and whether the decision made was consistent with appropriate legal standards. Based on this review of the final critical habitat designation, the Service determined it was necessary to revise critical habitat. On October 13, 2009, the Service proposed revised critical habitat for the arroyo toad (74 FR 52612), and it became final on February 9, 2011 (76 FR 7246). The newly designated critical habitat includes lands within the action area. The final recovery plan for the arroyo toad was published in 1999 (Service 1999). In addition to the final recovery plan, important sources for information on the biology of the arroyo toad include: Campbell et al. (1996), Griffin and Case (2001), Griffin et al. (1998), Holland and Sisk (2001), Ramirez (2002a, 2002b, 2002c, 2003), and Sweet (1992, 1993).

The arroyo toad is a light-olive green or gray to tan, dark-spotted toad with a distinctive light-colored, V-shaped stripe across the head and the eyelids. The species is endemic to the coastal plain and mountains of central and southern California and northwestern Baja California from near sea level to about 8,000 feet in elevation. Within these areas, arroyo toads are found in both perennial and intermittent rivers and streams that have shallow, sandy to gravelly pools adjacent to sand or fine gravel terraces. Breeding habitat requirements are highly specialized; specifically, arroyo toads require shallow, slow-moving streams, and riparian habitats that are disturbed on a regular basis, primarily by flooding. High stream order (i.e., 3rd to 6th order), low elevation (particularly below 3,000 feet), and wide flood plains seem to be positively correlated with arroyo toad population size. However, small arroyo toad populations are found along 1st and 2nd order streams at elevations up to 4,200 feet in southern California. The arroyo toad evolved in a system that is inherently dynamic, with marked seasonal and annual fluctuations in rainfall and flooding.

Arroyo toad juveniles and adults use upland areas adjacent to breeding habitat for foraging and wintering. They are known to use a variety of upland habitats including, but not limited to, sycamore-cottonwood woodlands, oak woodlands, coastal sage scrub, chaparral, and grassland (Holland and Goodman 1998, Griffin and Case 2001, Holland and Sisk 2001), but grasslands are perhaps less suitable and may primarily be used to travel through (U.S. Geological Survey (USGS) 2003). Griffin *et al*. (1999) found arroyo toads spent most of their time during the breeding season within the stream channel or on adjacent sandy terraces, but they also used upland areas such as campgrounds and even agricultural fields. Additionally, they found that arroyo toads seemed to select habitat more according to vegetation structure than vegetation type; dense and tall vegetative structure was preferred least of all.

In a radio telemetry study conducted during the arroyo toad breeding season, Griffin *et al.* (1999) found that adult female arroyo toads moved up to 443 feet from water, on average, while males moved up to 302 feet from water, on average, in streams with broad, coastal floodplains. In a

study using pitfall traps, Holland and Sisk (2001) captured arroyo toads primarily within the stream channel and riparian habitats, but approximately 18 percent of the adult and subadult captures averaged across all 3 years of the study were in upland habitats (11 percent at one site and 24 percent at the other). These upland captures averaged more than 1,640 feet and 820 feet from the riparian/upland ecotone in two separate coastal streams; one arroyo toad was even captured 3,740 feet beyond the edge of the riparian habitat bordering the stream. However, radio telemetry and pitfall trap studies from a variety of inland streams often bordered by steep, dry terrain show arroyo toad activity typically closer to the active stream channel. Four separate studies of inland populations by Ramirez (2002a, 2002b, 2002c, 2003) showed that arroyo toads burrowed no farther than 121 to 1,062 feet from the edge of a stream, with an overall average of approximately 52 feet between a toad's burrow and the edge of the stream. Griffin *et al.* (1999) also found male arroyo toads no further than 75 feet, on average, from a steep-sided stream near the coast. The extent of arroyo toad movement away from the stream channel is influenced by climatic conditions, availability of surface water, floodplain width, vegetative cover, and topography (Griffin *et al.* 1999; Ramirez 2002a). Moderate, stable temperatures and high humidity facilitate longer-distance movements into upland habitats (Service 1999).

Arroyo toads typically breed sometime between March and early June, although the breeding season may occur earlier or later, depending on weather conditions, elevation, and latitude. Males may breed with several females in a season; however, female arroyo toads release their entire clutch of eggs as a single breeding effort and probably do not produce a second clutch during the mating season. Eggs are deposited and larvae (tadpoles) develop in shallow pools with minimal current, little or no emergent vegetation and sand or pea gravel substrate. Embryos usually hatch in 4 to 6 days; the larval period lasts approximately 65 to 85 days. Metamorphosis from tadpole to juvenile toad typically occurs in June or July. The juveniles remain on gravel bars bordering the stream until the pool dries up. They reach sexual maturity in 1 to 2 years, and arroyo toads may live for as few as 5 years (Sweet 1993). Much less is known about movements or behavior in the late summer and winter months.

Larvae feed by inserting their heads into the substrate and ingesting loose organic material such as detritus, interstitial algae, bacteria, and diatoms. Juveniles and adults forage for insects, especially ants and small beetles, on sandy stream terraces. Juveniles spend more time exposed on terraces during the daytime than do adults, and are thus vulnerable to diurnal predators. Once juveniles are of sufficient size to dig burrows and bury themselves in the sand, they become nocturnal. All age classes of post-metamorphic arroyo toads tend to be active on rainy nights with moderate temperatures (above 45 degrees Fahrenheit). Adults excavate shallow burrows for shelter during the day when the surface is damp or during longer intervals in the dry season.

Arroyo toads have disappeared from approximately 75 percent of the previously occupied habitat in California. Historically, they were recorded in coastal drainages in southern California from Monterey County to San Diego County and in Baja California, Mexico. Today, the species occurs in Orange and San Diego Counties, and on the desert slopes of both the San Gabriel Mountains (in Little Rock Creek in Los Angeles County) and the San Bernardino Mountains (in

the Mojave River and in its tributaries, Little Horsethief and Deep Creeks, in San Bernardino County).

Extensive habitat degradation has led to the decline and isolation of the remaining populations of arroyo toads. This habitat loss is due primarily to urbanization, agriculture, dam construction, water manipulation (e.g., diversion, drawdown, changed hydroperiod), mining, livestock grazing, and recreational activities in riparian areas. The introduction of bullfrogs and exotic fish have negatively affected arroyo toad populations due to predation. Exotic plant species degrade arroyo toad habitat, and may cause changes in the invertebrate fauna upon which the arroyo toad feeds. The spread of chytrid fungus (*Batrachochytrium dendrobatidis*) may have also played a role in the loss of some populations. Changes in hydrologic regimes and loss of overwintering habitat as streamside areas are developed are probably the most important factors in the decline of arroyo toads.

Critical Habitat for the Arroyo Toad

The designated critical habitat for the arroyo toad includes 98,366 acres of federal, state, local, and private land in Santa Barbara, Ventura, Los Angeles, Riverside, San Bernardino, Orange, and San Diego counties. Primary constituent elements for the arroyo toad are identified 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. Breeding pools must persist a minimum of 2 months for the completion of larval development. However, due to the dynamic nature of southern California riparian systems and flood regimes, the location of suitable breeding pools may vary from year to year. Specifically, the conditions necessary to allow for successful reproduction of arroyo toads are:
    - Breeding pools that are less than 6 in. (15 cm) deep;
    - Areas of flowing water with current velocities less than 1.3 ft per second (40 cm per second); and
    - Surface water that lasts for a minimum of 2 months during the breeding season (a sufficient wet period in the spring months to allow arroyo toad larvae to hatch, mature, and metamorphose).
2. Riparian and adjacent upland habitats, particularly low-gradient (typically less than 6 percent) stream segments and alluvial streamside terraces 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; and adjacent valley bottomlands, that include areas of loose soil where toads can burrow underground, to provide foraging and living areas for juvenile and adult arroyo toads.

3. A natural flooding regime, or one sufficiently corresponding to natural, that: A) is characterized by intermittent or near-perennial flow that contributes to the persistence of shallow pools into at least mid-summer; B), maintains areas of open, sparsely vegetated, sandy stream channels and terraces by periodically scouring riparian vegetation; and C)

also modifies stream channels and terraces and redistributes sand and sediment, such that breeding pools and terrace habitats with scattered vegetation are maintained.

4. Stream channels and adjacent upland habitats that allow for movement to breeding pools, foraging areas, overwintering sites, upstream and downstream dispersal, and connectivity to areas that contain suitable habitat.

The goal of the critical habitat designation is the protection and management of breeding and non-breeding habitat on a watershed basis for the conservation of the species.

Recovery Plan for the Arroyo Toad

The 1999 final recovery plan for the arroyo toad states that the goal of recovery efforts is the reclassification of the species from endangered to threatened status and, ultimately, delisting of the species. The plan states that reclassification to threatened status may be considered when management plans have been approved and implemented on federally managed lands to provide for conserving, maintaining, and restoring the riparian and upland habitats used by arroyo toads for breeding, foraging, and wintering habitat. In addition, at least 20 self-sustaining metapopulations or subpopulations of arroyo toads must be maintained at the following locations (minimum number of populations for each agency and targeted river basins is indicated in parentheses): Fort Hunter Liggett Army Reserve Training Center (1: San Antonio River basin); Marine Corps Base Camp Pendleton (2: San Mateo/San Onofre Creek basins, Santa Margarita River basin); Los Padres National Forest (3: Castaic Creek basin, Los Angeles River basin [including Big Tujunga and Alder Creeks], Little Rock Creek basin); San Bernardino National Forest (1: Mojave River basin [including West Fork of the Mojave River, Little Horsethief Canyon, and Deep Creek]); Cleveland National Forest (8: San Juan Creek basin, San Mateo Creek basin, Upper Santa Margarita River basin, Sweetwater River basin, Tijuana River basin); and the Jacumba (In-Ko-Pah Mountains) Wilderness Study Area (1: Pinot Wash basin) managed by the Bureau of Land Management. Self-sustaining populations or metapopulations are those documented as having successful recruitment (i.e., inclusion of newly matured individuals into the breeding adult cohort in 7 of 10 years of average to above average rainfall amounts with normal rainfall patterns). Self-sustaining populations or metapopulations require little or no direct human assistance such as captive breeding or rearing, or translocation of arroyo toads between sites.

The plan states that delisting of the arroyo toad may be considered when genetic and phenotypic variation of the arroyo toad, throughout its range in California, is secured by maintaining 15 additional self-sustaining subpopulations or metapopulations of the arroyo toads on the coastal plain, coastal slope, desert slope, and desert lands, including known subpopulations and metapopulations outside of Federal jurisdiction in the Mojave River basin (San Bernardino County); the Whitewater River basin (Riverside County); the San Juan Creek basin (Orange and Riverside counties); Santa Margarita River basin (Sa Diego and Riverside counties); and the San Luis Rey River, San Dieguito River/Santa Ysabel Creek, San Diego River, Sweetwater, Otay River/Dulzura Creek, and Tijuana River basins (in San Diego County).

The recovery plan describes a strategy for reclassification, which includes the following actions: (1) stabilize and maintain populations throughout 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 additional suitable arroyo toad habitat and populations; (4) conduct research to obtain data to guide management efforts and determine the best methods for reducing threats; and (5) develop and implement an outreach program.

Relationship of Recovery Units and Critical Habitat Units

Based in part on the recovery plan for the arroyo toad, the Service proposed revised critical habitat units throughout the range of the arroyo toad (74 FR 52612). When the critical habitat became final, some of the critical habitat areas were removed or reduced in size. The critical habitat units designated have defined boundaries and cover specific areas throughout the three recovery units identified in the recovery plan. Table 2 depicts the relationship among the three recovery units and critical habitat units throughout the range of the arroyo toad.

Table 2.

Northern Recovery Unit			
Unit	**Critical Habitat Units and Subunits**	**County**	**Size of Critical Habitat Unit (acres)[1]**
1	San Antonio River - exempt	Monterey	0
2	Sisquoc River	Santa Barbara	3,775
3	Upper Santa Ynez River	Santa Barbara	3,032
4	Sespe Creek	Ventura	2,760
5	Piru Creek	Ventura	2,507
5a	……	…….	1,358
5b	……	…….	1,149
6	Upper Santa Clara River	Los Angeles	2,802
6a	……	…….	520
6b	……	…….	1,003
6c	……	…….	1,279
7	Upper Los Angeles River Basin	Los Angeles	1,190
Subtotal			16,066

Table 2. (continued)

Southern Recovery Unit			
Unit	**Critical Habitat Units and Subunits**	**County**	**Size of Critical Habitat Unit (acres)[1]**
8	Lower Santa Ana River Basin	Orange	737
9	San Jacinto River Basin	Riverside	2,391
9a	……	…….	1,226
9b	……	…….	1,165
10	San Juan Creek Basin	Orange, Riverside	3,496
10a	……	…….	3,097
10b	……	…….	399
11	San Mateo Basin	Orange, San Diego	1,820
11a	……	…….	975
11b	……	…….	845
12	Lower Santa Margarita Basin	San Diego	1,009
12a	……	…….	394
12b	……	…….	615
13	Upper Santa Margarita Basin	Riverside, San Diego	7,863
13a	……	…….	1,155
13b	……	…….	4,731
13c	……	…….	1,977
14	Lower and Middle San Luis Rey Basin	San Diego	10,115
15	Upper San Luis Rey Basin	San Diego	8,368
16	Santa Ysabel Creek	San Diego	15,370
16a	……	…….	13,866
16d	……	…….	1,504
17	San Diego River Basin	San Diego	4,171
17a	……	…….	1,149
17b	……	…….	1,865
17d	……	…….	1,157
18	Sweetwater River Basin	San Diego	4,625
18a	……	…….	4,155
18c	……	…….	470
19	Cottonwood Creek Basin	San Diego	14,345
19a	……	…….	5816
19b	……	…….	5,130
19c	……	…….	1,512
19d	……	…….	938
19e	……	…….	950
Subtotal			74,310

Table 2. (continued)

Desert Recovery Unit			
Unit	**Critical Habitat Units and Subunits**	**County**	**Size of Critical Habitat Unit (acres)[1]**
20	Upper Santa Ana River Basin/Cajon Wash	San Bernardino	1,775
21	Little Rock Creek Basin	Los Angeles	612
22	Upper Mojave River Basin	San Bernardino	5,602
22a	……	…….	5,684
22c	……	…….	0
23	Whitewater River Basin	Riverside	0
Subtotal			7,989
Total			98,366

Source: Service 2009
[1] Values in table may not sum due to rounding

Unarmored Threespine Stickleback

The unarmored threespine stickleback was federally listed as endangered in 1970 primarily due to competition with and predation by non-native fish, loss of habitat through urbanization and channelization, and introgression with other subspecies of sticklebacks (35 FR 16047). The unarmored threespine stickleback is a fully protected species under California law (see California Fish and Game Code, Section 5515 (b)(9)). The recovery plan for the unarmored threespine stickleback (Service 1985) provides additional information on the biology of the species, reasons for its decline, areas of essential habitat, and the actions needed for recovery of the species.

On November 17, 1980, the Service proposed designating approximately 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 action area and runs from the confluence with San Martinez Grande Canyon upstream to the I-5 Bridge. On September 17, 2002, the Service 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 Act (67 FR 58850). The Endangered Species Conservation Act did not have a critical habitat designation requirement. A lawsuit brought by the Center for Biological Diversity resulted in a decision by the Ninth Circuit Court of Appeals in 2006 upholding the Service decision to not designate critical habitat for unarmored threespine stickleback. Therefore, critical habitat for the unarmored threespine stickleback will not be discussed further in this biological opinion.

Unarmored threespine sticklebacks are small fish (up to 2.36 inches) inhabiting slow moving reaches or quiet water microhabitats of streams and rivers. Favorable habitats usually are shaded by dense and abundant vegetation. In more open reaches, algal mats or barriers may provide refuge for the species. Unarmored threespine sticklebacks feed primarily on benthic insects, small crustaceans, and snails, and to a lesser degree, on flat worms, nematodes, and terrestrial

insects. Unarmored threespine sticklebacks reproduce throughout the year with a minimum of breeding activity occurring from October to January. Reproduction occurs in areas with adequate aquatic vegetation and gentle flow of water where males establish and vigorously defend territories. The male builds a nest of fine plant debris and algal strands and courts all females that enter his territory; a single nest may contain the eggs of several females. Following spawning, the males defend the nests and the newly hatched fry, which hatch after approximately 6 days. Unarmored threespine sticklebacks are believed to live for only 1 year (Service 1985).

Unarmored threespine sticklebacks historically were distributed throughout southern California but are now restricted to the upper Santa Clara River and its tributaries in Los Angeles County, San Antonio Creek on Vandenberg Air Force Base (VAFB) in Santa Barbara County, Shay Creek (tributary to Baldwin Lake) in San Bernardino County, and San Felipe Creek in San Diego County. A population was transplanted into San Felipe Creek in the Salton Sea drainage and into Cañada Honda Creek on VAFB. Transplanted populations tend not to persist (Moyle 2002). In fact, no individuals have been observed in Cañada Honda Creek in 13 years (R. Evans, VAFB Natural Resource Manager, pers. comm., 2008).

Habitat degradation in the form of flood control and channelization are the primary threats to the survival of the unarmored threespine stickleback. Other forms of habitat degradation can occur when people or livestock trample stream banks, causing increased soil erosion and sedimentation in streams and breeding pools and reducing the availability of plants and insects that serve as habitat and food for the species. Damage to, or destruction of, the emergent vegetation along the stream banks also degrades the shallow, weedy nursery areas that provide abundant food and shelter for unarmored threespine stickleback.

Other threats to unarmored threespine stickleback often occur in popular riparian areas near campgrounds where humans dam pools for wading and inadvertently trample adjacent sand or gravel bars during streamside recreational activities. These activities force the unarmored threespine stickleback to constantly move away from human traffic or be driven into areas where they are more susceptible to injury or mortality due to predation or recreational activities.

Exotic predators such as African clawed frogs, bullfrogs, mosquitofish (*Gambusia affinis*), red swamp crayfish (*Procambarus clarkii*), and green sunfish (*Lepomis cyanellus*), prey on or compete for resources with unarmored threespine sticklebacks. In addition, certain non-native species may serve as vectors for the Ich parasite (*Ichthyopthirius multifilis*) that could infect populations of unarmored threespine stickleback. Populations of unarmored threespine stickleback in the Angeles National Forest were severely affected by the introduction of Ich in 1995 (U.S. Forest Service (USFS) 2000). Introduced goldfish (*Carasius auratus*) were suspected to be the source of the Ich infestation.

Recovery Plan for the Unarmored Threespine Stickleback

The 1985 final recovery plan for the unarmored threespine stickleback states that the species could be considered recovered when: (1) habitat conditions for each of the known remnant

populations have been stabilized at or near historical carrying capacities; (2) the other known threats have been addressed in a manner that assures the continued existence of these populations; and (3) at least five self-sustaining populations have been maintained within the historical range of unarmored threespine stickleback for a period of 5 consecutive years without significant threats to their continued existence.

The plan states that to reach the point of recovery, the known extant populations must be preserved and protected, additional populations will need to be successfully reintroduced into historical habitats, the spread of exotic organisms will need to be controlled, and degraded habitats will need to be restored and maintained. In order to do this, adequate instream flows must be maintained in all essential habitats, land uses must be regulated to maintain good water quality, the introduction of additional exotic organisms must be prevented, the spread of established populations of exotic organisms controlled, suitable reintroduction sites within the historical range must be found, and habitat conditions must be monitored to ensure that satisfactory conditions for unarmored threespine stickleback are being maintained.

The recovery strategy for the unarmored threespine stickleback, as defined in the recovery plan, includes the following actions: (1) close regulation of removal (take) of the species; (2) monitoring and appropriate management of habitat conditions; (3) implementation of contingency plans to protect the species from natural or man-made disasters; and (4) establishment of additional populations in suitable reintroduction sites as needed.

Coastal California Gnatcatcher

The coastal California gnatcatcher was federally listed as threatened on March 30, 1993 (58 FR 16742). Revised critical habitat for the coastal California gnatcatcher was designated on December 19, 2007 (72 FR 72010) . The RMDP area does not include any critical habitat for the coastal California gnatcatcher; therefore, critical habitat for this species will not be discussed further in this biological opinion. No recovery plan exists for the coastal California gnatcatcher. The Service completed a 5-year of the species' status in September 2010 (Service 2010b).

The coastal California gnatcatcher is a small member of the old-world warbler and gnatcatcher family Sylviidae (AOU 1998). The bird is dark blue-gray above and grayish-white below. The tail is mostly black above and below. The male has a distinctive black cap, which is absent during the winters. Both sexes have a white eye-ring. The coastal California gnatcatcher is primarily insectivorous, non-migratory, and exhibits strong site tenacity (Atwood 1990). Fecal samples showed a predominance of leaf and plant-hoppers and spiders in the diet, while true bugs, wasps, bees, and ants were only minor components (Burger et al. 1999). The coastal California gnatcatcher is a highly detectable species for much of the year, both visually and vocally. Preston et al. (1998) found that detectability of a San Diego population ranged from 80 percent to 90 percent of pairs from March through September and from 50 percent to 80 percent of pairs from October through December.

Coastal California gnatcatchers occur 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 (Service 2010b). The species' range continues south into Baja California to El Rosario, Mexico (Atwood 1991). Atwood (1990) reported that 99 percent of all coastal California gnatcatcher locality records occurred at or below an elevation of 984 feet. Atwood and Bolsinger (1992) reported that, of 324 sites of recent occurrence, 272 (84 percent) were located below 820 feet, 315 (97 percent) were below 1,640 feet, and 324 (100 percent) were below 2,460 feet. Since that time, additional data collected at higher elevation shows that this species may occur as high as 3,000 feet and that more than 99 percent of the known coastal California gnatcatcher locations occurred below 2,500 feet (65 FR 63680).

Coastal California gnatcatchers are typically found in or near coastal sage scrub habitat on mesas, gently sloping areas, and along the lower slopes of the coast ranges. The species tends to occur most frequently within stands dominated by California sagebrush (*Artemisia californica*) (Atwood 1990). An analysis of the percent gap in shrub canopy supports the observation that coastal California gnatcatchers prefer relatively open stands of coastal sage scrub (Weaver 1998). The coastal California gnatcatcher occurs in high frequencies and densities in scrub with an open or broken canopy, 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 also use chaparral, grassland, and riparian habitats where they occur adjacent to coastal sage scrub (Campbell et al. 1998). The use of these habitats appears to be most frequent during late summer, autumn, and winter, with smaller numbers of individuals using such areas during the breeding season. Although existing quantitative data may reveal relatively little about coastal California gnatcatcher use of these other habitats, these areas may be critical during certain times of year for dispersal or as foraging areas during drought conditions (Campbell et al. 1998). Breeding territories have also been documented in non-sage scrub habitat. Campbell et al. (1998) believe that habitats other than coastal sage scrub are used by coastal California gnatcatchers for foraging, dispersal by juveniles, respite from temperature extremes, fire avoidance, and fledglings to escape predation. Linkages of habitats other than coastal sage scrub along linear features such as highways and power line corridors may also be of substantial value in linking populations of the coastal California gnatcatcher (Famolaro and Newman 1998).

The coastal California gnatcatcher becomes highly territorial by late February or early March and males become more vocal during this period (Mock et al. 1990). In southwestern San Diego County, the mean territory size during the breeding season ranged from 12 to 27 acres per pair; during the non-breeding season, territory size ranged from 12 to 42 acres per pair. During the non-breeding season, coastal California gnatcatchers have been observed to wander into adjacent territories and unoccupied habitat, increasing their home range size by up to 78 percent over their breeding territory (Preston et al. 1998).

The breeding season of the coastal California gnatcatcher extends from mid-February through the end of August, with the peak of nesting activity occurring from mid-March through mid-May. The coastal California gnatcatcher's nest is a small, cup shaped basket usually found 1 to 3 feet above the ground in a small shrub or cactus. Clutch sizes range between three and five eggs, with the average being four. Juvenile birds associate with their parents for several weeks (sometimes months) after fledging (Atwood 1990). Nest building begins in mid-March with the earliest recorded egg date of March 20 (Mock et al. 1990). Post breeding dispersal of fledglings occurs between late May and late November. Coastal California gnatcatchers are persistent nest builders and often attempt multiple broods, which is suggestive of a high reproductive potential. This may be offset by high rates of nest predation and nest parasitism (Atwood 1990).

Predation is the most common cause of nest failure (Grishaver et al. 1998). Potential nest predators are numerous, and include cats, snakes, raccoons, and corvids (birds in the family Corvidae) (Grishaver et al. 1998). The coastal California gnatcatcher also is known to be affected by nest parasitism by the brown headed cowbird. Nest parasitism may have shifted the coastal California gnatcatcher's nesting season in some areas to earlier in the year to help compensate for the negative effects (Patten and Campbell 1998). However, the gains in nest success from decreased nest parasitism appear to be negated by increased nest abandonment due to predation before brown-headed cowbirds have migrated into an area (Braden et al. 1997).

Post-natal dispersal for the coastal California gnatcatcher is an important aspect of the biology of the species (Galvin 1998). The mean dispersal distance of coastal California gnatcatchers from a study of birds banded in San Diego County is reported at less than 1.9 miles (Bailey and Mock 1998). Although the mean dispersal distances that have been documented above are relatively low, dispersal of juveniles is difficult to observe and document without extensive banding studies. The few current studies may not adequately estimate the coastal California gnatcatcher's dispersal capability (Bailey and Mock 1998). Juvenile coastal California gnatcatchers are apparently able to traverse highly man modified landscapes for at least short distances (Bailey and Mock 1998).

Natural and restored coastal sage scrub habitat along highway corridors is used for foraging and nesting by coastal California gnatcatchers and may also serve important dispersal functions (Famolaro and Newman 1998). Typically, however, the dispersal of juveniles requires a corridor of native vegetation, which provides foraging and cover opportunities to link larger patches of appropriate sage scrub vegetation (Soulé 1991). These dispersal corridors may facilitate the exchange of genetic material and provide a path for recolonization of areas from which the species has been extirpated (Soulé 1991, Galvin 1998). Without dispersal corridors, birds in shrub habitats isolated by urbanization may undergo rapid, localized extinction (Soulé et al. 1988).

The coastal California gnatcatcher was considered locally common in the mid-1940s, but by the 1960s this subspecies had declined substantially in the U.S. due to widespread habitat destruction (Atwood 1990). In 1993, at the time the coastal California gnatcatcher was listed as threatened,

the Service estimated that approximately 2,562 pairs of coastal California gnatcatchers occurred in the U.S. In 1997, the total number of coastal California gnatcatchers in the U.S. was estimated at 2,899 pairs with two-thirds occurring in San Diego County (Service 1996). These population estimates were intended to represent a coarse approximation of the number of coastal California gnatcatchers in southern California. Currently, the Service believes that earlier estimates were probably low and that the number of coastal California gnatcatchers is higher, although no accurate estimate is available (Service 2010b).

The destruction and fragmentation of habitat are the principal reasons for the coastal California gnatcatcher's federally threatened status (58 FR 16742). Up to 90 percent of coastal sage scrub vegetation has been lost as a result of development and land conversion (Westman 1981a and b; Barbour and Major 1977); coastal sage scrub is considered to be one of the most depleted habitat-types in the U.S. (Kirkpatrick and Hutchinson 1977, O'Leary 1990). The amount of occupied suitable habitat available to coastal California gnatcatchers has continued to decline since the species was listed as development in the species' range has continued. Urbanization contributes to the loss, degradation, and fragmentation of coastal sage scrub by altering wildfire frequency due to human intervention. Higher fire frequencies and the lag period associated with recovery of the vegetation may substantially reduce the viability of affected subpopulations. Less frequent fires may allow the vegetation to reach a density and height not preferred by coastal California gnatcatchers.

Spotlight Species Action Plan for Coastal California Gnatcatcher

A recovery plan for the coastal California gnatcatcher has not been published; however, a Spotlight Species Action Plan (2010-2014) (SSAP) has been prepared (Service 2009). This and similar plans are intended as internal guidance documents for the Service to direct its resources toward recovery of "at risk" or high profile listed species.

According to the SSAP, areas with coastal sage vegetation have been subject to much urban development resulting in conflicts between species and habitat conservation and construction or other development projects and other forms of economic activity. To address this economic conflict and promote recovery of the coastal California gnatcatcher, the Service and CDFG have worked jointly with jurisdictions and other stakeholders to prepare regional Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs) that permitted incidental take of coastal California gnatcatcher in return for mitigation in the form of habitat conservation and management to benefit the species. These regional HCP/NCCP Plans established a network of core and linkage habitat preserves throughout much of the coastal California gnatcatcher U.S. range. The SSAP identifies two threat sources: (1) urban and agriculture development; wildland fire; habitat type conversion; and (2) climate change. Wildfires in 2003 and, especially, 2007 burned tens of thousands of acres of coastal California gnatcatcher's habitat including areas preserved under the regional HCP/NCCPs. The burned areas are now at risk of being overrun by nonnative grasses and forbs (habitat type-conversion).

The SSAP states that the target of recovery efforts is to improve the population status of the coastal California gnatcatcher by increasing the size of coastal California gnatcatcher populations and improving habitat quality at sites burned in the past 10 years. To accomplish this, the Service would work with its partners to select sites that would be the best candidates for restoration. The RMDP area is not within any of the burned areas targeted for habitat restoration; however the SSAP's general recovery goal of improving the population status of the California gnatcatcher as applied to the RMDP area is to increase the size of coastal California gnatcatcher populations in the plan area.

Five-year Review of the Status of the Coastal California Gnatcatcher (Service 2010b)
The 5-year review of the status of the coastal California gnatcatcher concludes that many of the threats that existed when the species was listed as threatened in 1993 remain. A more recent development is the conversion of coastal sage scrub habitat to other vegetation types as a result of catastrophic wildfires in the first decade of this century. Despite large-scale, long-time planning efforts to conserve the species (e.g., NCCPs, HCPs), the 5-year review concludes that the species' listing status should remain unchanged.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) define the action area being addressed in a consultation as the area that may be directly or indirectly affected by the proposed action (50 *Code of Federal Regulations* 402.02). We consider the action area for this biological opinion to include the entire RMDP area, totaling 13,651 acres. In addition, because of the potential for indirect effects due to non-point and point source discharges into the Santa Clara River from the proposed development, the action area includes the Santa Clara River corridor between the RMDP area and the "dry gap," which is approximately 5 miles downstream of the RMDP area boundary.

The RMDP area is located in northern Los Angeles and eastern Ventura counties, and consists of the Newhall Ranch Specific Plan area and the adjacent Salt Creek Area. The Santa Clara River and State Highway 126 traverse the northern portion of the site, and the Santa Clara River extends approximately 5.5 miles east to west across the RMDP area.

The action area contains large areas of natural vegetation; however, the project applicant has historically leased, and continues to lease, portions of the RMDP area for oil and natural gas production, as well as for cattle grazing, ranching, and agricultural operations (e.g., food crop production, dry land farming, honey farming). As a result of these activities, natural vegetation is absent in some areas, replaced by dirt and asphalt roads, graded oil well pads and pipelines, and pumping, storage, and transmission facilities.

Vegetation communities and land covers in the action area vary in quality from high biological value in natural areas to highly disturbed lands, such as upland agricultural areas and facilities related to oil and natural gas production (Table 3). Native and naturalized vegetation

communities present are representative of those found in the region and include high-quality examples of the vegetation communities found in the Santa Susana Mountains to the south and the Santa Clara River ecosystem. Upland vegetation communities dominate the landscape within the site, both north and south of the Santa Clara River. The dominant upland native vegetation communities include California sagebrush scrub and associations, undifferentiated chaparral and associations, coast live oak woodlands, and valley oak woodlands and associations. The dominant non-native community is California annual grassland. The Santa Clara River supports a variety of riparian vegetation communities, including southern cottonwood-willow riparian forest, southern willow scrub, southern coast live oak riparian forest, giant reed, bulrush-cattail wetland, Mexican elderberry and associations, tamarisk scrub, mulefat scrub, arrow weed scrub, alluvial scrub, big sagebrush scrub, herbaceous wetlands, coastal and valley freshwater marsh, cismontane alkali marsh, and river wash. Intermittent and ephemeral drainages within the action area include cismontane alkali marsh, river wash, mulefat scrub, scalebroom scrub, big sagebrush scrub, and alluvial scrubs.

TABLE 3. Vegetation Communities and Land Cover Types within the RMDP Area

Vegetation Community/Land Cover Type	Associations	Total Acreage
Upland Grassland		
California annual grassland		2,175.5
Purple needlegrass		0.6
Coastal Scrub		
California sagebrush scrub		1,529.3
California sagebrush scrub	Burned California sagebrush scrub	1,469.3
California sagebrush scrub	California sagebrush scrub – *Artemisia californica*	82.5
California sagebrush scrub	California sagebrush scrub – purple sage	393.5
California sagebrush scrub	Disturbed California sagebrush scrub – purple sage scrub	4.5
California sagebrush scrub – black sage scrub		196.3
California sagebrush scrub – California buckwheat		310.0
California sagebrush scrub/undifferentiated chaparral		135.0
California sagebrush scrub/undifferentiated chaparral	Burned California sagebrush scrub/ undifferentiated chaparral	5.2
Coyote brush scrub		9.2
Chaparral Scrub		
Chamise chaparral		55.7
Scrub oak chaparral		1.5
Undifferentiated chaparral		1,106.9
Undifferentiated chaparral	Burned undifferentiated chaparral	957.2
Other Scrubs		
Eriodictyon scrub		0.2
Upland Woodland and Savannah		
California walnut woodland		27.2
Coast live oak woodland		757.8
Mixed oak woodland		168.9
Valley oak woodland		79.4
Valley oak woodland	Valley oak/grass	461.4

TABLE 3. Vegetation Communities and Land Cover Types within the RMDP Area (continued)

Vegetation Community/Land Cover Type	Associations	Total Acreage
Riparian Waters and Wetlands		
Bulrush–cattail wetland		1.4
Cismontane alkali marsh		18.6
Coastal and valley freshwater marsh		2.0
Herbaceous wetland		183.1
River wash		290.0
Riparian Scrub		
Alluvial scrub		1.0
Arrow weed scrub		18.7
Big sagebrush scrub		76.5
Big sagebrush - California buckwheat		0.5
Giant reed		5.6
Mexican elderberry		12.8
Mexican elderberry	Disturbed Mexican elderberry	0.3
Mulefat scrub		71.5
Southern willow scrub		22.7
Shrub tamarisk		2.8
Riparian Forest Woodland		
Southern coast live oak riparian forest		0.7
Southern cottonwood-willow riparian forest		358.3
Land Covers		
Agriculture		1,576.4
Developed land[1]		0.5
Disturbed land[2]		1,080.6
Total		**13,651.1**

[1] Developed land refers to areas supporting manmade structures including homes, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Within the RMDP area, developed land refers to existing roads.

[2] Disturbed land typically occurs in areas where soils have been recently or repeatedly disturbed by grading or compaction resulting in the growth of very few native perennials, and are usually dominated by bare ground or non-native dicotyledonous species including filaree (*Erodium* spp.), black mustard, thistles (e.g., *Cynara cardunculus*, *Carduus pynocephalus*, and *Centaurea melitensis*), dove weed, and others.

The action area is topographically diverse, with slope gradients ranging from moderate to steep in the hillsides to very gentle in the Santa Clara River floodplain and in major tributary canyons. Two large mesas (i.e., Grapevine Mesa and Airport Mesa) are adjacent to the Santa Clara River. The primary ridges are east-, west-, and northwest-trending, with secondary ridges trending north and south. Distinctive ridges within the action area include Sawtooth Ridge, along the northeastern side of Long Canyon, and Round Mountain at the northern edge of Potrero Canyon. Site elevations range from 825 feet above mean sea level in the Santa Clara River bottom at the Ventura County/Los Angeles County line to approximately 3,200 feet on the ridgeline of the Santa Susana Mountains along the southern boundary.

Past Consultations in the Vicinity of the Action Area

The Service has issued numerous biological opinions for actions that have occurred or will occur within the vicinity of the action area for this consultation. In all cases, the Service determined that the proposed action was not likely to jeopardize the continued existence of, nor destroy or

adversely modify the critical habitat of, the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, or coastal California gnatcatcher. Appendix A shows the level of take we anticipated in each of the biological opinions issued in the action area and vicinity.

Least Bell's Vireo

Least Bell's vireos have been observed within the action area during focused bird surveys, which were conducted annually from 1993 to 2007 following surveys according to Service protocol for this species. Least Bell's vireos nested in the River corridor on-site in every year surveys were conducted (Guthrie 1993, 1995, 1996, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006; Labinger and Greaves 1995, 1996, 1997, 1999; Bloom Biological 2007). According to Bloom Biological (2007), at least 56 territories and three active nests occurred along the Santa Clara River and adjacent floodplains within and immediately surrounding the RMDP area (Interstate 5 Bridge west to Las Brisas Bridge). The species is associated primarily with the Santa Clara River mainstem; all observations of nesting and transient individuals were within this area. The number of observations of this species in the vicinity of the action area suggests that least Bell's vireos regularly use riparian habitat in the Santa Clara River corridor in and around the site for breeding and foraging as well as during migration.

Within the action area, the primary nesting habitat (southern cottonwood-willow riparian forest, southern coast live oak riparian forest, southern willow scrub, mulefat scrub, arrow weed scrub, and Mexican elderberry scrub and woodland,) of the least Bell's vireo occurs along the Santa Clara River and Castaic Creek. Based upon the figures in Table 3, primary nesting habitat for least Bell's vireos totals 485 acres. Some suitable nesting habitat may exist in the other drainages within the action area (e.g., Potrero Canyon and Salt Creek). The scientific literature indicates that native upland shrubland and woodland habitat adjacent to nesting habitat may be used for foraging as well, especially late in the breeding season; the majority of habitat for upland foraging occurs within 100 feet of the riparian zone (Kus and Miner 1989). Specific locations of suitable nesting riparian habitat with adjacent upland foraging habitat occur within the action area, generally along the south side of the Santa Clara River.

Appendix A shows that in past biological opinions in the vicinity of the action area, we anticipated the cumulative projects would result in take of 39 least Bell's vireos and 1.68 acres of designated critical habitat. None of these biological opinions resulted in jeopardy or adverse modification determinations. During the period over which these biological opinions were issued, the least Bell's vireo population along the Santa Clara River has grown (Service 2006).

Critical Habitat for the Least Bell's Vireo

The Santa Clara River is within critical habitat Unit 2. This unit includes approximately 4,409 acres, which extends for approximately 12 miles beginning in the vicinity of Rancho Camulos in Ventura County and ending in the vicinity of Rye Canyon Road in Los Angeles County. The critical habitat rule does not define any specific conservation function for this unit. We assume

that it is intended to serve the same function as the overall designation, which is to conserve known populations of least Bell's vireo through the section 7 consultation mechanism.

The action area includes approximately 2,252 acres of critical habitat. According to the response to a comment in the final rule concerning refinement of the critical habitat,

> "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 Service. Thus, designation of critical habitat will not effect [sic] those areas within the legal critical habitat boundaries that do not contain vireo nesting or foraging habitat." (59 FR 4845).

A total of 443 acres of the 2,252-acre critical habitat unit within the RMDP area supports the primary constituent elements of critical habitat for the least Bell's vireo (Corps and CDFG 2010). The remaining 1,809 acres are agricultural fields, oil production, and other uses that have removed the natural vegetation. By further calculation, of those 2,252 acres, approximately 1,408 acres are within the footprint of the proposed development (the Specific Plan area). Most of the habitat in these 1,408 acres is upland habitat which does not support the PCEs of least Bell's vireo critical habitat.

Draft Recovery Plan for the Least Bell's vireo

The draft recovery plan for the least Bell's vireo 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 River 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." The draft recovery plan does not specify the recovery function of the Santa Clara River unit.

Southwestern Willow Flycatcher

Willow flycatchers (possibly *E.t. extimus, E. t. adastus,* or *E. t. brewsteri*) have been detected almost every year within the river corridor in the action area during the focused bird surveys. All observations of willow flycatchers within the region have been concluded to be migrants because they were only detected once, or were only detected during the first two survey periods and not during the survey period between June 22 and July 17 when only the southwestern willow flycatcher would be present. While the migrant willow flycatchers observed could include the southwestern willow flycatcher, no southwestern willow flycatchers exhibiting nesting, paired, or territorial behavior have been observed in the action area.

The most recent observation of confirmed breeding southwestern willow flycatchers along the Santa Clara River was in 2009, when one pair nested within the vicinity of the Santa Paula Water Recycling Facility (approximately 24 miles downstream of the RMDP area). This pair successfully fledged one chick (Davenport 2009). Another observation of confirmed breeding southwestern willow flycatchers along the Santa Clara River was in 2006, when two pairs nested

near Fillmore (approximately 11 miles downstream of the RMDP area), one successfully. The California Natural Diversity Database (CDFG 2010a) also lists one occurrence of nesting southwestern willow flycatchers in the Santa Clara River corridor upstream of the action area, along Soledad Canyon Road near Agua Dulce, in 1997.

Within the action area, suitable willow flycatcher habitat exists in southern willow scrub, southern coast live oak riparian forest, and southern cottonwood–willow riparian forest, which occur predominantly in the Santa Clara River as well as a portion of Castaic Creek and Salt Creek. Based upon the figures in Table 1, suitable southwestern willow flycatcher habitat totals 382 acres. Suitable southwestern willow flycatcher habitat on-site has been surveyed annually from 1999 to 2007 according to Service protocol for this species. 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, observations of non-breeding willow flycatchers were recorded. The most recent protocol survey (Bloom Biological 2007) was conducted by surveying all potential and marginally potential habitat by slowly walking and stopping to listen for calls and songs over a 2.5-mile stretch (0.25 to 0.75 miles wide) of the Santa Clara River and its tributaries within and adjacent to the RMDP area.

Currently, the action area appears to be a migratory stop for willow flycatchers. Nesting populations of the southwestern willow flycatcher have not been detected on-site.

Appendix A shows that in past biological opinions in the vicinity of the action area, we anticipated that, cumulatively, the projects would result in take of 9 southwestern willow flycatchers. None of these biological opinions resulted in jeopardy determinations.

Recovery Plan for Southwestern Willow Flycatcher

The action area is located within the Coastal California Recovery Unit of the final recovery plan. Within the Santa Clara River, the reach from Bouquet Canyon Road to the Pacific Ocean, which crosses through the action area, has been identified as a Management Unit where recovery actions should be focused (Service 2002). Specifically, the metapopulation in his management unit has been identified for increased population stability and enhancement. The minimum number of territories targeted for this management unit before the southwestern willow flycatcher can be reclassified to threatened is 25.

California Condor

Surveys for the California condor were included as part of other raptor and avian species surveys that were conducted along the Santa Clara River (Bloom Biological 2007). The entire survey area consisted of approximately 25 miles of the Santa Clara River and its major tributaries, which included the entire stretch of the river within the action area.

California condors are known to exist and nest in the Sespe Condor Sanctuary approximately 13 miles northwest of the action area. As opportunistic scavengers, California condors can travel up to 139 miles per day (Wilbur 1978; Meretsky and Snyder 1992; Snyder and Snyder 2000). In

recent history California condors in Ventura and Los Angeles counties had extensive foraging habitat in the southern portion of their range, including the Simi Hills, Thousand Oaks, Santa Susana Mountains, and the Antelope Valley. Beginning in the 1950s, much of this area began to go through extensive land use change, from undeveloped land to commercial and residential development and changes in agricultural practices which reduced the extent of suitable foraging habitat.

California condors traveling between the roosting and nesting areas of the Sespe Condor Sanctuary and extensive portions of the Los Padres National Forest and the San Gabriel Mountains travel along the northern ridges and foothills east of Hopper Canyon and north of the Santa Clara River Valley, and cross the valley to the south where they pick up the Santa Susana Mountains as an extension of their flyway to the east. Flying conditions are excellent for the birds as they take advantage of prevailing winds coming up the Santa Clara River Valley and thermals rising off the grassland and chaparral hillsides on both sides of the Santa Clara and Simi Valleys.

Since 2000, a number of condors in the population have been fitted with either satellite or Global Positioning System (GPS) transmitters, which produce GPS coordinates. These coordinates can pinpoint topographically the exact location for each bird at any given moment. California condors released at the Hopper Mountain National Wildlife Refuge north of Fillmore soon discovered the excellent flying conditions of the Santa Clara Valley and the San Gabriel Mountains, and began exploring these areas. A favorite destination for the birds was Kagel Mountain in the San Gabriel Mountains, a well-known launch site for paragliders and hanggliders. The obvious attraction is the excellent flying conditions. Flights from Hopper Mountain to the San Gabriel Mountains take birds directly over the action area.

As described in the introduction for the species, California condors are obligate scavengers, constantly surveying the landscape for potential food sources. The RMDP area offers excellent foraging habitat for California condors; an open grassland oak-savanna landscape with domestic cattle and native deer populations.

Historical records for the RMDP area documented in the McBee archives, a system developed in the mid 1960's by Service research biologists studying the species, record all known California condor sightings up through 1986. The earliest known records from the RMDP area are from 1935 in an interview conducted by Carl Koford in 1940, with a Mr. Hackney, orchard foreman of Newhall Ranch. Carl Koford describes the interview as follows: "…..5 to 6 years ago he and his brother saw 7 to 8 condors on Tapo Ridge at a carcass. They were on the road, and as they drew near, the birds took off. They seemed very clumsy on the ground and took off downhill to the North. Mr. Hackney thinks this observation took place in May or June. He recognized the birds by the large size and white patches under the wing." A second historical sighting relayed to Mr. Koford on June 3, 1940, by a Mr. Villa regarding condors in Tapo Canyon state: "condors were most numerous in winter by far. He said he had seen great numbers-perhaps 100-at a time in winter (1938-1939 winter especially)." The observations of Mr. Villa would corroborate

observations by staff of the Condor Recovery Program in the southern part of the condor's range. Condor numbers increase in the southern part of the range during winter months when flying conditions in the foothills of the San Joaquin Valley are less optimal due to tule fog and overcast conditions.

In the 1974 California Condor Recovery Plan, mention is also made of the importance of grassland foraging habitat south of the Santa Clara River Corridor. Under Appendix A, titled Action Plan Narrative outside the Sespe-Piru area, "Food and feeding habitat", the Recovery Plan states, "Through contact with Ventura County Planning departments and other groups and individuals, encourage zoning, land use agreements, legislation, etc., that will result in large areas of open space within the present condor range being retained with few disturbances and with an optimum complement of livestock. *Emphasis should be placed on the Big Mountain-Oak Ridge area south of the Santa Clara Valley, as this is a historically used condor feeding area, and is the largest area of open range in close proximity to the Sespe Condor Sanctuary."* (emphasis is the author's). Since this was written, additional areas of potential foraging habitat have been lost in the Simi Valley foothills and surrounding areas making this area of additional concern.

Recent condor use of the RMDP area has been documented by visual observations and GPS data (Table 4). Twenty-five out of 46 condors are now wearing GPS transmitters in southern California. These transmitters give hourly locations (coordinates) for each bird throughout most daylight hours. The ability to download this data on a daily basis greatly increases the accuracy of tracking individual bird movements and determining high use areas.

TABLE 4. California Condor Records on Newhall Ranch in 2008 and 2009.

Condor (by number)	Date of Record	Behavior	Notes
SB #79	1/26/09	Perched, flying	Likely associated with cow carcass documented by C. Niemela on 1/30/09.
	1/27/09	Perched, flying	
	4/11/09	Flying	Likely associated with cow carcass found by G. Grisdale on 4/24/09.
	4/15/09	Perched, flying	
	4/16/09	Perched, flying	
SB #107	4/10/08	Ground	
	1/27/09	Perched	Likely associated with cow carcass documented by C. Niemela on 1/30/09.
	4/16/09	Flying, perched	Likely associated with cow carcass found by G. Grisdale on 4/24/09.
SB #125	4/24/09	Flying, perched	Likely associated with cow carcass found by G. Grisdale on 4/24/09.
SB #156	4/2/08	Flying, perched	
	4/3/08	Flying	
	4/4/08	Ground	

TABLE 4. California Condor Records on Newhall Ranch in 2008 and 2009. (continued)

Condor (by number)	Date of Record	Behavior	Notes
	4/6/08	Ground	
	4/7/08	Ground	
	5/20/08	Ground	
	5/24/08	Ground	
	5/25/08	Ground	
	6/3/08	Ground	
SB #161	4/3/08	Ground	

On several days during April through July of 2008, staff from Hopper Mountain National Wildlife Refuge detected via GPS transmitters that California condors had landed within the action area. Peter Bloom (biological consultant to Newhall Land) went to the landing and confirmed that there was a domestic cow carcass that had been scavenged and that there was "white wash" at the site of the carcass. This observation shows that, although the RMDP area does not provide suitable nesting habitat for California Condors, this opportunistic species does at least sporadically forage over the higher-elevation areas of the site, including the High Country SMA region where more exposed terrain and updrafts likely occur. Additionally, as the California condor population increases, California condors may fly more frequently over the action area on their way to foraging opportunities

No other biological opinions have been issued for the California condor in the vicinity of the RMDP area. We have issued biological opinions to the U.S. Forest Service for effects of ongoing activities (e.g., road maintenance) on the California condor in the Los Padres National Forest and to the Bureau of Land Management for the leasing of an oil pad site near the Sespe Condor area. Neither of these biological opinions concluded that the actions would result in jeopardy of the California condor, nor did they anticipate that any injury or mortality would result from the proposed actions.

Recovery Plan for the California Condor

The California condor recovery plan identifies a series of geography-specific activities (Service 1996) to assist in the recovery of the condor. The recovery plan does not propose any recovery activities in the action area. The nearest recovery activity area relative to the action area is the Sespe–Piru Condor Area.

Arroyo Toad

Studies by Bloom Biological (2009) and Impact Sciences (2001, 2002a) concluded that nearly all of the suitable arroyo toad habitat within the action area occurs between the banks of the Santa Clara River (excluding adjacent uplands) and within its associated tributaries. This suggests that suitable habitat exists within the action area for breeding adults and arroyo toad tadpoles; however, beyond the outer banks, both natural topography and human activities provide either an inaccessible or inhospitable environment for dispersing juvenile and/or adult arroyo toads. Furthermore, much of the upland habitat beyond the banks of the river and its tributaries does not support habitat for adult arroyo toads. The only areas where suitable, accessible, upland foraging

habitat exists are on the southern side of the Santa Clara River (primarily California sagebrush scrub vegetation). These areas were designated as being of moderate habitat quality by Impact Sciences (2001). Only a few such areas exist where access by adult toads would not be constrained by either very dense vegetation or steep banks (Bloom Biological 2007).

During surveys conducted in May and September of 2000, six arroyo toad tadpoles were identified by Aquatic Consulting Services (2002a, 2002d) at five locations within the action area. Although several protocol surveys were conducted after 2000 for all life stages of arroyo toads, including eggs, larvae, juveniles, and adults (SMEA 1995; RECON 1999; Impact Sciences 2001, 2002a; Aquatic Consulting Services 2002a, 2002b, 2002c, 2002d), no other arroyo toads were been identified within the action area..

In portions of the Santa Clara River watershed upstream of the action area, adult toads have been documented in limited numbers along the river and tributaries. One adult toad was identified within approximately 0.31 mile of the action area's upper limit (CNDDB 2010c). Other documented occurrences of arroyo toad in the upper Santa Clara River watershed (but outside the action area boundaries) include:

- Santa Clara River just east of Interstate 5; one individual captured and released on July 20, 1994 (CNDDB 2010c), located approximately 2 river miles from the action area; however, a portion of the action area (upland and not within the river) is located approximately 0.25 mile away from this occurrence. This upland area between the occurrence and the action area is already developed and urbanized. Therefore, the principle connection between the action area and the known record is along the 2 river miles.
- 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), located approximately 12 river miles upstream from the action area.
- Upper San Francisquito Creek; calling male arroyo toads observed in 1997 near the old Saint Francis Dam (70 FR 19562), located approximately 12 river miles upstream from the action area.
- Upper San Francisquito Creek; recent surveys (presumably on USFS land) "found evidence of the species" in the drainage (70 FR 19562), approximately 8.5 river miles upstream of the action area.
- Santa Clara River; report of six arroyo toad tadpoles adjacent to Castaic Junction in 2000 (CNDDB 2010c), which is within the action area.
- Santa Clara River; four adult arroyo toads reported by Sandburg (2001) near the confluence with San Francisquito Creek (unpublished notes sent to the Service), located approximately 3 river miles upstream of the action area.
- Santa Clara River; a single adult was observed near the confluence with San Francisquito Creek (Impact Sciences 2002a), located approximately 3 river miles upstream of the action area.

- Soledad Canyon area; 75 tadpoles reported from 3 sites located approximately 11 miles east of the Interstate 5 crossing (Sandburg 2001), located approximately 17 river miles upstream of the action area.
- Santa Clara River; in 2003, Ramirez reported "recent observations of arroyo toads and eggs" in the vicinity of the confluence with San Francisquito Creek (Ramirez 2003), located approximately 3 river miles upstream of the action area.

The survey protocol for the arroyo toad (Service 1999) states that areas within 0.62 mile of arroyo toad sites (documented by the presence of eggs, tadpoles, juveniles, or adults) that have suitable habitat will be presumed to have arroyo toads. Given that a known adult arroyo toad occurrence has been identified within 0.62 mile of the site boundary and six tadpoles were located in the action area, and because the riverine habitat within the action area is contiguous, the arroyo toad may be present anywhere suitable habitat for the species occurs within the action area. URS (2010) reports that the action area supports approximately 1,476.3 acres of potential arroyo toad habitat (Figure 5-2 of the biological assessment).

Although the action area supports suitable habitat for the arroyo toad and tadpoles have been reported within the action area, only a low number of tadpoles, and no adult or subadult arroyo toads, have been observed within the action area despite multiple survey efforts conducted over more than a decade. Additionally, the CNDDB (2010c) lists no arroyo toad sightings within the portion of the action area between the RMDP area and the "dry gap," several miles downstream in eastern Ventura County. Work by Impact Sciences (2001, 2002a, 2002b) suggests that, because the upland habitat is not suitable for adult arroyo toad foraging within the action area, it is possible that arroyo toad numbers were never high in this portion of the Santa Clara River. Bloom Biological (2007) suggests that there may be many factors responsible for the absence of arroyo toads from the action area, including stream contaminants, predation by African clawed frogs and bullfrogs, disease, irregular pulses of water in the river, and reduced arthropod food supply.

Regardless of explanation, data from the systematic surveys that have been conducted to date appear to support the conclusion that no resident breeding population of this species is currently present within the action area (SMEA 1995; RECON 1999; Impact Sciences 2001, 2002a; Aquatic Consulting Services 2002a, 2002b, 2002c, 2002d). Additionally, the arroyo toad is likely extirpated from the portion of the Santa Clara River from Castaic Creek downstream to the Ventura County line (Bloom Biological 2007). However, given the presence of upstream populations of arroyo toad, tadpole observations in the eastern portion of the action area (within the Santa Clara River), and the presence of high quality habitat throughout the reach of the Santa Clara River and Castaic Creek on the site, the potential exists for the arroyo toad to occur in the portions of the Santa Clara River and Castaic Creek within the action area as well as in surrounding riparian and upland areas.

Appendix A shows that in past biological opinions in the vicinity of the action area, we anticipated the projects would result in take of 11 arroyo toads in total. None of these biological

opinions resulted in jeopardy determinations. During the period over which these biological opinions were issued, the population of arroyo toads in the action area has apparently declined. Past observations have not been repeated despite surveys for aquatic species during which arroyo toads would have been observed.

Critical Habitat for the Arroyo Toad

The Santa Clara River is within critical habitat Unit 6. This unit is located in northwestern Los Angeles County and consists of three subunits totaling 2,802 acres. The action area lies within critical habitat subunit 6b, which encompasses approximately 2.6 miles of Castaic Creek from the downstream edge of the Old Road right-of-way down to the confluence with the Santa Clara River, 6 miles of the Santa Clara River from the confluence with Bouquet Creek down to the confluence with Castaic Creek, and 1.1 mile of San Francisquito Creek from Newhall Ranch Road downstream to the confluence with the Santa Clara River. This subunit consists of 1,003 acres. The conservation function of this unit is as a connection between the known populations of arroyo toad in tributaries to the Santa Clara River, and to accommodate natural population expansion and fluctuation.

The action area includes approximately 413.1 acres of critical habitat for the arroyo toad. The physical and biological features essential for the conservation of the arroyo toad found in this subunit include: breeding pools in low-gradient stream segments with sandy substrate, seasonal flood flows, and riparian habitat and upland benches for foraging and dispersal (i.e., primary constituent elements).

According to the final rule (76 FR 7246),

> "When determining revisions to critical habitat boundaries for this final rule, we made every effort to avoid developed areas, such as lands covered by buildings, pavement, and other structures, because such lands lack PCEs for the arroyo toad. We did not designate some areas if habitat was highly degraded and not likely restorable, nor did we designate areas that were highly fragmented or isolated. Such areas provide little or no long-term conservation value and do not support the physical and biological features essential to the conservation of the arroyo toad. Agricultural lands may have been included if they were within areas identified as necessary for dispersal or connectivity between known occurrences. However, we avoided known areas of intensive agriculture that lacked the PCEs for the arroyo toad. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this revised critical habitat are excluded by text in this final rule. Therefore, Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification, unless the specific action may affect adjacent critical habitat.

Consequently, while the boundary of the critical habitat includes 413.1 acres within the RMDP area, some of the lands within those 413.1 acres may be "excluded by text" because they do not contain the PCEs. Newhall estimates[2] that of the 413.1 acres of designated critical habitat within the RMDP area, approximately 71.4 acres do not contain the PCEs identified in the arroyo toad critical habitat, and 341.7 acres do contain the PCEs. This figure is based upon exclusion of heavily cultivated fields, oil production areas, and areas of permanent disturbance that were included within the limits of designated critical habitat and not excluded because of the scale of the maps.

Recovery Plan for the Arroyo Toad

The Santa Clara River basin is included in Subregion 7 of the Northern Recovery Unit in the recovery plan for the arroyo toad (Service 1999). 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 (Service 1999). The inclusion of these waterways is based on current or historical occurrences of arroyo toad in portions of the drainages. The main stem of the Santa Clara River is not directly identified in the recovery plan as having a conservation role in the recovery strategy for the species.

Unarmored Threespine Stickleback

ENTRIX (2009) conducted surveys for the unarmored threespine stickleback in 2004 and 2005 within the reach of the Santa Clara River mainstem within the action area. Where flows were present, the tributary drainages of Salt Canyon, Potrero Canyon, Long Canyon, San Martinez Grande Canyon, Chiquito Canyon, Humble Canyon, Lion Canyon, and Middle Canyon were surveyed using dip nets and seines. At certain locations, bank observation was utilized when other techniques were not feasible due to access issues.

ENTRIX (2009) surveyed for unarmored threespine stickleback 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.

Additional surveys for the unarmored threespine stickleback were conducted in 1988, 1995, 2000, 2002 through 2005 and 2007 (Aquatic Consulting Services 2002a, 2002b, 2002c, 2002d; ENTRIX 2009, Haglund 1989; Impact Sciences 2003a, 2003b, 2003c, 2003d). The unarmored threespine stickleback was observed during surveys within the Santa Clara River portion of the Newhall Ranch Specific Plan in 1988, 1995, 2000, 2002, 2003, and 2007 (Aquatic Consulting Services 2002a, 2002b, 2002c, 2002d; ENTRIX 2009; Haglund 1989; Impact Sciences 2003a, 2003b, 2003c).

[2] We reviewed maps and aerial photographs of the action area with Newhall's representatives and agree that their estimates are and conclusions are valid. Maps showing the acreages and boundaries were provided by Newhall and are on file at the Ventura Fish and Wildlife Office.

On August 24, 2009, Service staff along with biologists from the U.S. Geological Survey (USGS), San Marino Associates, and Newhall Land and Farming staff surveyed the Santa Clara River beginning at its confluence with San Francisquito Creek downstream to the Las Brisas Bridge. Approximately 60 unarmored threespine sticklebacks were detected in the vicinity of the Santa Clara River and San Francisquito confluence. Approximately 60 more unarmored threespine sticklebacks were detected immediately downstream of The Old Road Bridge. No unarmored threespine sticklebacks were detected below the Valencia waste water treatment plant (Chris Dellith, Service, pers. obs. 2009).

Suitable habitat for this species is present throughout the reach of the Santa Clara River within the action area (approximately 5 river miles), although the locations of the habitat change temporally with changes in river morphology. No suitable unarmored threespine stickleback habitat, with the exception of Castaic Creek, is present in tributaries to the Santa Clara River within the action area (ENTRIX 2009). The unarmored threespine stickleback is found in all sections of the Santa Clara River within the action area.

Appendix A shows that in past biological opinions in the vicinity of the action area, we anticipated that cumulatively, the projects would result in take of 68 unarmored threespine stickleback. None of these biological opinions resulted in jeopardy determinations.

Recovery Plan for the Unarmored Threespine Stickleback

The unarmored threespine stickleback recovery plan (Revised) was published in 1985 (Service 1985). 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 action area. The recovery plan does not specify the recovery function of any of the units.

Coastal California Gnatcatcher

The coastal California gnatcatcher was not detected within the RMDP area during annual surveys between 1993 and 2008 (Bloom Biological 2007a; Dudek 2006; Guthrie 2000a, 2000b, 2004a, 2004d, 2004e; Impact Sciences 2000; SAIC 2003) and surveys according to Service protocol for this species in 2000 (Guthrie 2000a, 2000b, 2000c; Impact Sciences 2000), in 2004 (Guthrie 2004a, 2004b, 2004d, 2004e and 2004g), in 2007 (Dudek 2007b), and in 2008 (Dudek 2008); however, an individual coastal California gnatcatcher was observed on August 8 and August 15, 2008, within the RMDP area by Dudek biologist Traci Caddy, during monitoring for improvements of the Del Valle Training Center Road, located south of the town of Val Verde, off Chiquito Canyon and east of the Del Valle Training Center. The August 15 observation occurred during construction monitoring, when the individual was observed for approximately 5 minutes in California sagebrush-California buckwheat scrub before it flew west. The coastal California gnatcatcher was not observed for the remaining 3 weeks of construction monitoring, which terminated on September 15, 2008. Given the time of year and because no other coastal

California gnatcatchers have ever been detected within the RMDP area (despite extensive focused and general surveys), these observations are suspected to have been dispersing or transient individuals, perhaps from isolated populations of coastal California gnatcatchers that have been periodically observed to the east of the RMDP area. A second individual coastal California gnatcatcher was observed on October 5, 2007, by Dudek biologist Jeff Priest and biologist Ron Francis, a sub-consultant to Dave Crawford, Compliance Biology, Inc., at the Valencia Commerce Center (VCC) project site, adjacent to the RMDP area (Dudek 2007c). This observation occurred for approximately 8 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.

The action area supports approximately 4,126 acres of suitable habitat (i.e., California sagebrush scrub) for the coastal California gnatcatcher. Based on the amount of suitable habitat onsite, the number of coastal California gnatcatchers currently known to occur in Los Angeles and Ventura counties, and the species range of territory sizes, we believe that the action area could theoretically contain from 152 to 343 coastal California gnatcatcher pairs. Other documented occurrences of coastal California gnatcatcher in the vicinity of the action area (but outside the action area boundaries) have been detected or are known to occur approximately:

- 3.9 miles south of the action area in Las Virgenes Canyon in Calabasas;
- 9.2 miles southwest of the action area near Little Simi Valley;
- 14 miles southwest of the action area adjacent to Tierra Rejada Road and borders the western boundary of the City of Simi Valley;
- 16 miles southwest of the action area near the intersection of State Route 23 and Tierra Rejada Road in Moorpark;
- 10 miles southwest of the action area near California Lutheran University in Thousand Oaks;
- 5 miles northeast of the action area near the intersection of Lowridge Place and San Francisquito Canyon Road in Santa Clarita;
- 7 miles northeast of the action area near the junction of Haskell Canyon and Bouquet Canyon in Santa Clarita;
- 11 miles east of the action area near the intersection of Live Oaks Spring and Sand Canyon Road in Santa Clarita;
- 8 miles southeast of the action area near the intersection of Golden Valley Road and Sierra Highway in Santa Clarita; and
- 12 miles southeast of the action area near the intersection of Odyssey Dive and Blucher Avenue in Granada Hills.

Appendix A shows that in past biological opinions in the vicinity of the action area, we anticipated that cumulatively, the projects would result in take of two coastal California gnatcatchers and loss of approximately 389 acres of designated critical habitat. None of these biological opinions resulted in jeopardy or adverse modification determinations. During the period over which these biological opinions were issued, more coastal California gnatcatchers have been observed; however, we do not know whether these additional observations are due to

population increases or greater survey efforts. Also, since the biological opinions were issued that analyzed coastal California gnatcatcher critical habitat, the critical habitat rule has been revised and no longer includes any critical habitat in the region.

While we estimate that, based on suitable habitat, the potential exists for up to 343 pairs of coastal California gnatcatcher in the action area (based upon suitable habitat and published range sizes), the actual number of coastal California gnatcatchers observed in the action area following 15 years of avian surveys is one individual bird. This bird was not located during subsequent surveys, so we conclude it was either a transient or at the edge of its territory. In any case, we have no evidence that the action area supports the estimated number of coastal California gnatcatcher pairs that we calculated based on suitable habitat. Notwithstanding the potential for large numbers of coastal California gnatcatchers based on habitat availability, we conclude from the known records that one coastal California gnatcatcher is present in the action area.

Spotlight Species Action Plan

The SSAP (Service 2009) states that the target of recovery efforts is to improve the population status of the coastal California gnatcatcher by increasing the size of coastal California gnatcatcher populations and improving habitat quality at selected sites within regional HCP/NCCPs that burned in the past 10 years. Although portions of the action area burned during fires in 2007, the action area is not within a designated regional HCP/NCCP selected for restoration under the SSAP; however the SSAP's general recovery goal of improving the population status of the California gnatcatcher can be applied to the RMDP area, and we conclude that the goal would be to increase the size of coastal California gnatcatcher populations in the plan area.

EFFECTS ANALYSIS

The RMDP area is located in northern Los Angeles and eastern Ventura counties, and encompasses approximately 13,651 acres. The proposed action under review is the issuance of an individual 404 permit by the Corps. As detailed earlier in this opinion in the Project Description section, issuance of the permit is necessary to enable construction of development associated with the RMDP. Therefore, we consider the impacts of the development project itself to be an indirect effect of the Corps permit and thus include the development project in our analysis of impacts. At build-out, the proposed development would result in permanent impacts to approximately 4,907 acres of existing vegetation communities and land covers, representing 36 percent of the RMDP area. Of the six species potentially affected by the proposed action (i.e., the least Bell's vireo, southwestern willow flycatcher, California condor, coastal California gnatcatcher, arroyo toad, and unarmored threespine stickleback), four species are dependent upon aquatic and riparian habitat. In total, the build-out would result in the permanent removal of approximately 184 acres of riparian vegetation, representing 13.1 percent of the vegetation within RMDP area. The coastal California gnatcatcher occurs in coastal scrub habitats. In total, the build-out would result in the permanent removal of approximately 1,458 acres of coastal scrub communities, representing 10.2 percent of these communities within the RMDP area.

In addition to the permanent loss of the riparian vegetation and other land covers, there would be both direct and indirect effects to the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher. Some of these effects would be the result of the following: habitat loss; habituation; use of herbicides and pesticides; maintenance activities; nonpoint-source pollution; project-related fugitive dust; project-related noise: project-related ground vibration; project-related night lighting; predation and resource competition by pets and non-native animal species; invasion by exotic plant species; introduction of diseases; project-related trash; and urbanization. Specific effects of these factors and activities are described below, under the sub-heading for each of the respective species covered in this consultation; however, a general discussion of urbanization, which would directly and indirectly affect the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher is provided in the following paragraphs.

Development for urban use involves clearing of existing vegetation. Larger urban developments also often involve earth-moving activities resulting in topographical recontouring. Urban development typically results in buildings, roads, and other infrastructure, such as pipeline installation, which are permanent. Without active management in the form of habitat restoration, sites formerly supporting native vegetation (e.g., coastal sage scrub) that have undergone severe disturbance (like heavy equipment and earth moving activities) take decades to recover (Stylinski and Allen 1999). Clearing for fire abatement (e.g., fire breaks, fuel breaks) is done to protect urban and agricultural areas and similarly involves vegetation clearing and often tilling, and can thus result in adverse effects to listed species.

Residential and commercial development (i.e., urbanization) adjacent to or upstream of a water course can lead to the loss of freshwater fish and an increase in non-native species (Marchetti et al. 2006). Nonpoint-source pollution and habitat alteration often result from urbanization. One of these sources of pollutants is stormwater run-off, which is the byproduct of the construction of roadways or structures that reduce the permeability of urban watersheds. Stormwater run-off resulting from urbanization conveys large amounts of organic matter; pesticides; and fertilizers; heavy metals; hydrocarbons; oil and grease; and other debris into streams and wetlands. Skinner et al. (1999) found that developed watersheds had greater concentrations of toxic pollutants than less developed areas with more open space. The decrease in water quality can have negative impacts on native aquatic and riparian species (Moyle 2002).

In the sections that follow, we analyze the effects of project components on individuals of the species and their habitats. The impact of these combined effects on the survival and recovery of each species is summarized at the end of each analysis and re-stated in detail in the Conclusion section that follows these analyses.

Least Bell's Vireo and Southwestern Willow Flycatcher
Because these species generally occupy the same habitat types, we expect that the effects to least Bell's vireo and southwestern willow flycatcher due to the proposed project will be similar; therefore we have combined the analysis for these two species. Loss of riparian habitat would diminish available foraging habitat for least Bell's vireos and southwestern willow flycatchers. Project-related fugitive dust, noise and ground vibration, and night lighting, contact with polluted runoff, and human activity near habitat occupied by least Bell's vireos and southwestern willow flycatchers could disturb individuals to the extent that they could abandon foraging and breeding habitat. In particular, construction-related noise, vibration, and night lighting could adversely affect nesting and breeding behavior, resulting in a decrease in nesting success. Specific Plan build-out would convert lands adjacent to the river corridor to urban uses and could potentially result in adverse edge effects on least Bell's vireo and southwestern willow flycatcher populations within the river corridor. Long-term potential secondary impacts include harassment by humans, predation by pets and non-native animal species, invasion by exotic plant species such as giant reed and tamarisk, increased trash, increased native and non-native mesopredators (e.g., striped skunks (*Mephitis mephitis*), raccoons, and Virginia opossums (*Didelphis virginiana*)) as a result of increased habitat fragmentation, degraded water quality, hydrologic and geomorphic alterations, noise, and night lighting. Least Bell's vireos and southwestern willow flycatchers often react strongly to the close approach of humans, particularly when nestling or fledgling young are also present. Moreover, human disturbances may compromise least Bell's vireo nesting (Salata 1987). Anecdotal evidence further suggests that human presence can attract predators to least Bell's vireo and southwestern willow flycatcher habitat areas. Predators and cowbirds may both be capable of "homing in" on agitated least Bell's vireos and southwestern willow flycatchers, and subsequently destroy or parasitize nearby nests (The Nature Conservancy 1997, Chace et al. 2002). Project-induced alterations, reductions, or disturbances of occupied and potential least Bell's vireo habitat and an increased human presence may induce higher rates of cowbird parasitism and nest depredation (RECON 1989, Pike and Hays 1992).

Construction activities that completely remove habitat reduce availability of breeding, nesting, and foraging sites for least Bell's vireos and southwestern willow flycatcher. Even if habitat modification activities occur outside of the breeding season for these subspecies, the reduction of nesting and foraging habitat could adversely affect individual least Bell's vireos and southwestern willow flycatchers by reducing the available resources for individuals' subsequent reproduction. Least Bell's vireos and southwestern willow flycatchers typically return to established breeding territories year after year (Greaves and Labinger 1997, Salata 1983, Sogge 2000, Sedgewick 2000). In a study on the San Diego River (Beck 1996), a banded population of least Bell's vireo generally returned year after year with only minor adjustments in territory location. Further, loss of habitat may cause the returning least Bell's vireos or southwestern willow flycatchers to adjust or shift their territories. When shifting territories, least Bell's vireos or southwestern willow flycatcher could experience decreased fitness due to increased energy and time spent competing for a new territory. A shift in territories could result in a delay in the initiation of nest building, fewer nesting attempts per season, a reduced clutch size per attempt,

and an overall reduction in reproductive output. Loss of habitat, even temporarily, may cause the birds to seek out another area in which to nest, either permanently or until the site has been revegetated and restored. Although the RMDP area is not expected to be fully restored for several years following construction activities, restoration of the disturbed areas and removal of invasive, exotic vegetation, would help minimize the long-term effects on the least Bell's vireos and southwestern willow flycatcher from the project related to habitat degradation.

In specific terms, Newhall's construction-related activities (e.g., vegetation removal and movement of equipment in construction zones) would result in the permanent loss of 77 acres of least Bell's vireo nesting and foraging habitat. Based upon the published territory sizes for the least Bell's vireo (0.5 to 7.5 acres/pair) and assuming a uniform distribution of territories and saturation of suitable habitat and the area of permanently affected habitat, the project activities could theoretically result in the permanent direct loss of habitat for 10 to 154 pairs of least Bell's vireos. Approximately 41 acres of suitable least Bell's vireo nesting and foraging habitat would be temporarily affected as a result of project construction (temporarily affected habitat includes disturbed areas that would be subject to restoration or would not have permanent structures or roads). Based upon the published territory sizes for the least Bell's vireo (0.5 to 7.5 acres/pair) and assuming a uniform distribution of territories and saturation of suitable habitat and the area of temporarily affected habitat, the project activities could theoretically result in the temporary loss of habitat for 5 to 82 pairs of least Bell's vireos.

Newhall's construction-related activities would result in the permanent loss (direct and indirect) of 23.1 acres of suitable breeding and foraging habitat for the southwestern willow flycatcher. Based on the range of territory sizes for southwestern willow flycatcher (0.15 to 5.7 acres/pair) and assuming a uniform distribution of territories and saturation of suitable habitat and the amount of suitable habitat for this species that could be lost, the project activities could result in the direct loss of 4 to 154 southwestern willow flycatcher territories due to permanent habitat loss. Approximately 30 acres of suitable southwestern willow flycatcher nesting and foraging habitat would be temporarily affected as a result of project construction. By similar calculation, approximately 5 to 200 southwestern willow flycatcher territories could be adversely affected as a result of temporary impacts.

Least Bell's vireos and southwestern willow flycatcher may attempt to nest in uncleared riparian habitat near any development during periods when construction activity or project-related noise is temporarily halted, minimized, or in a different location. If construction activity or noise increases once a least Bell's vireo or southwestern willow flycatcher pair has established a nest or breeding territory near the project activities, the pair may abandon their nest, resulting in a failed breeding attempt and unnecessary expenditure of energy.

Accidental releases of contaminants (e.g., fuels, oil, pesticides, etc.) into the riparian area or water may negatively affect the quality of the habitat for the least Bell's vireo and southwestern willow flycatcher by killing native plants used for nesting or foraging and decreasing the prey base. Maintenance of flood, drainage, and water quality protection facilities also has the

potential to cause injury or mortality of least Bell's vireos and southwestern willow flycatchers due to destruction of nests; however, to reduce or eliminate such effects, Newhall would implement minimization and avoidance measures described in the RMDP.

Polluted run-off from construction activities as well as long-term adverse effects to water quality also have the potential to cause harm to individual least Bell's vireos and southwestern willow flycatchers; however, compliance with the construction general permit (Order No. 99-08-DWQ) mandates that construction-related non-stormwater discharges do not cause or contribute to violation of any clean water standards. Also, Project Design Features of the RMDP would limit stormwater pollutant levels in the long term.

The development proposed within the RMDP area would preclude least Bell's vireo or southwestern willow flycatcher from nesting within the immediate vicinity of residential or commercial development for two reasons related to predation. The first predation problem is the introduction of non-native predators, specifically cats, which can prey on least Bell's vireo or southwestern willow flycatcher adults, young and eggs. Cats are known to have a great impact on native animals, especially birds (Jurek 1994). The presence of cats extends the negative effects of the development well into adjacent habitat and could eliminate any nesting attempts by least Bell's vireo and southwestern willow flycatcher in the future, even if the habitat adjacent to development is preserved. Second, residential development may result in the control of native predators, such as coyote (*Canis latrans*). Coyotes are known to suppress the populations of smaller predators, such as cats, grey foxes (*Urocyon cinereoargenteus*), and Virginia opossums that also prey upon nesting birds. In the absence of coyotes, populations of these smaller predators may increase, and native birds that nest in riparian habitat, including the least Bell's vireo and southwestern willow flycatcher, may decline or be eliminated (Soulé *et al*. 1988).

In addition to the predator problems, housing and commercial development introduces a suite of other indirect effects. These include night lighting, noise, introduction of non-native plants, increased irrigation and surface water runoff, and potential contamination by pesticides used by residents. Furthermore, human activity in least Bell's vireo and southwestern willow flycatcher breeding habitat such as hiking, exploring, recreational shooting, and walking unleashed dogs could flush birds away from nests, or disturb adults to such a degree that reproductive attempts are unsuccessful. The combined impact of these effects would be to reduce the suitability of the habitat for least Bell's vireo and southwestern willow flycatcher.

Chronic traffic noise associated with roads and bridges in close proximity to potential breeding habitat in the river corridor could have adverse effects on the establishment of breeding territories and reproductive success. Birds rely on auditory signals in the form of songs, and alarm or scolding calls, to establish and defend territories, attract a mate, feed and care for young at the nest, and to locate and evade a potential predator (e.g., Scherzinger 1979). Construction and the use of heavy equipment can result in noise and vibration impacts which are thought to be potentially harmful to a variety of bird species (Gunn and Livingston 1974, RECON 1989, Pike and Hays 1992).

We have used 60 dBA as a practical threshold above which significant impacts to the least Bell's vireo and southwestern willow flycatcher might occur. The 60dBA threshold is considered average conversation level and is typically the level encountered under ambient conditions (i.e., without noise sources such as vehicles or tools). Based upon this threshold, RECON (1989) estimated that noise levels above 60 dBA from March 15 to September 15 may impact least Bell's vireo reproductive success. While least Bell's vireos often continue to occupy areas subject to noise levels above 60 dBA, one study has documented significantly reduced reproductive success due to noise impacts (U.S. Marine Corps 1995). We expect that above some yet unknown noise threshold, least Bell's vireos, as well as southwestern willow flycatcher, could abandon an otherwise suitable habitat area. Greaves (1989) hypothesized that the lack of breeding least Bell's vireos in apparently suitable habitat is due to noise from human presence (e.g., bulldozers, off-highway vehicles, and hiker travel). Therefore, unabated noise resulting from construction activities may interfere with the reception of auditory signals by least Bell's vireo and southwestern willow flycatcher potentially resulting in increased predation, lowered reproductive success and/or abandonment of otherwise suitable habitat. Dudek (2007d) conducted a traffic noise study that indicates least Bell's vireos currently nest in close proximity to State Route-126 in areas where noise levels somewhat exceed 60 dBA.

The noise model for the proposed RMDP shows that the large majority of the riparian zone in the river corridor would have noise levels less than 65 dBA (except at two bridge crossings) and, thus, levels not substantially greater than existing conditions. The noise levels at the two bridges would affect at least three known least Bell's vireo territories. One known least Bell's vireo territory would be affected by noise as a result of increased traffic along Highway 126. In terms of suitable habitat for both the least Bell's vireos and southwestern willow flycatcher, 332.3 acres would be affected by noise. Within this suitable habitat, approximately seven known territories of least Bell's vireo would be affected by noise. No known territories of the southwestern willow flycatcher would be affected.

Night lighting associated with roads and bridges in close proximity to potential breeding habitat for least Bell's vireos and southwestern willow flycatchers in the river corridor could have adverse effects on the establishment of breeding territories and reproductive success for both species. Construction-related and long-term lighting secondary impacts, may impede the establishment of breeding territories and reproductive success both in the short-term and long-term.

Despite the amount of suitable habitat for the least Bell's vireos and southwestern willow flycatcher that would be permanently and temporarily affected by the project, and the number of territories for each species that could hypothetically be present, the data for the action area indicate that neither species is as abundant in the action area as measurements based solely on territory size and acreage of suitable habitat would indicate. The highest census for least Bell's vireos recorded 56 territories within the action area. Of those 56 known territories, none would be directly removed by project activities. Impacts to the least Bell's vireo are expected to result solely from indirect effects (e.g., noise), and the indirect effects would extend only into 1 of the

known 56 territories (based upon the 60dBA noise contour). The total effect of the project on the known least Bell's vireo territories would be the potential loss of 1 out of 56. Rangewide, this number is small in comparison to the most recent census data for the species that indicates an increase in the number of territories from 298 at the time of listing to 2,968 (Service 2006). With the measures proposed by the applicant to address other threats to the least Bell's vireo (e.g. cowbird trapping, habitat restoration), the impact on the species rangewide would be minimal.

For the southwestern willow flycatcher, no territories have been recorded within the action despite several years of survey effort. Therefore, we assume no territories would be lost as a result of the project. Impacts to the southwestern willow flycatcher would be limited to loss of habitat used by migrating individuals for foraging and resting. Because much more suitable habitat for those activities would remain intact after the project due to measures proposed by the applicant (e.g., preservation of riparian habitat), we expect that the impact of the project on the southwestern willow flycatcher rangewide to be negligible. No active or known nesting habitat would be lost and the species should not decline in numbers or distribution as a result of the RMDP project.

As described in the recovery plan for the southwestern willow flycatcher (Service 2002) and in the draft recovery plan for the least Bell’s vireo (Service 1998), the recovery strategies for both species focus on five tasks: (1) protecting and/or restoring habitat, (2) reducing cowbird nest parasitism, (3) reducing influx of exotic species, (4) researching life histories of the species, and (5) increasing public education about the species (Service 2002, Service 1998). Although the action under review has the potential to adversely affect least Bell’s vireo and southwestern willow flycatcher, and will result in the permanent loss and temporary disturbance of habitat for both species, these impacts should be minimized through implementation of conservation measures. Mainly, the applicant proposes to preserve and restore riparian habitat and implement cowbird trapping. These measures are consistent with the recovery tasks listed above and, as a result, the proposed project should not impede attainment of the recovery goals for the two species. Impacts to suitable habitat should be offset by riparian and upland restoration and enhancement activities that will provide suitable habitat for least Bell’s vireo and southwestern willow flycatcher (See Dudek 2010, Mitigation Measures BIO-1 through BIO-16).

To the extent the RMDP will cause changes in hydrology, these impacts are expected to be minimal and largely offset by hydro-modification control measures (e.g., a combination of drop structures/grade stabilizers and bank stabilization to maintain sediment equilibrium and protect the channel bed and banks). Also, the Santa Clara River system is dynamic and undergoes cyclical flooding, scouring, and successional revegetation, and we do not expect the hydrological changes resulting from the proposed project will change those dynamics. Consequently, changes to hydrology are not expected to have a substantial effect on suitable habitat for the least Bell's vireo and southwestern willow flycatcher.

The suite of RMDP mitigation measures also includes a cowbird trapping program and strategies for the removal and control of exotic plant species, such as giant reed, which degrade habitat

necessary for least Bell's vireo and southwestern willow flycatcher (see Dudek 2010, Mitigation Measures BIO-78; SP-4.6-11, SP-4.6-15, BIO-6, BIO-10). The proposed cowbird trapping will help alleviate the nest parasitism that has contributed to the decline of both species throughout their respective ranges and should help increase nesting success (or allow nesting by southwestern willow flycatchers which are not currently known to nest in the action area). The proposed restoration and exotic plant removal measures should increase the amount of available and suitable habitat for both species, and help offset the habitat losses that would occur.

As to the remaining two recovery goals – species research and public education – the proposed action either advances these objectives or is task-neutral. For example, previously adopted mitigation measures for the Newhall Specific Plan require extensive pre-construction surveys for least Bell's vireo and southwestern willow flycatcher. These surveys add to the store of publicly-available data on these species. The RMDP also includes a program for educating homeowners as to the wildlife surrounding residential developments (Dudek 2010, Mitigation Measure BIO-63).

The proposed action also is subject to a host of pollution-control measures that will reduce secondary effects on least Bell's vireo and southwestern willow flycatcher. These include measures to maintain water quality in riparian areas (see Dudek 2010, Mitigation Measures SP-4.2-6, SP-4.2-7, WQ-1, WQ-2). Furthermore, noise impacts on the species should be controlled to minimize impacts on the birds (Dudek 2010, Mitigation Measure BIO-56.)

We conclude that the proposed action, as modified by the RMDP proposed mitigation measures, should not appreciably reduce the reproduction, numbers, or distribution of either the least Bell's vireo or southwestern willow flycatcher. The total effect of the project on the known least Bell's vireo territories would be the potential loss of 1 out of 56. Rangewide, this number is negligible in comparison to the most recent census data for the species that indicates an increase in the number of territories from 298 at the time of listing to 2,968 (Service 2006). No southwestern willow flycatcher territories would be lost as a result of the project; no active or known nesting habitat would be lost and the species should not decline in number or distribution as a result of the RMDP project. Impacts to the southwestern willow flycatcher would be limited to loss of habitat used by migrating individuals for foraging and resting. Because much more suitable habitat for those activities would remain intact after the project due to measures proposed by the applicant (e.g., preservation of riparian habitat), we expect that the impact of the project on the southwestern willow flycatcher rangewide to be negligible. Most of the existing suitable habitat for both species would be preserved in the action area, and the applicant has proposed specific measures (e.g., cowbird trapping, exotic plant removal, habitat restoration, maintenance of current hydrological conditions, etc.) to address likely sources of adverse effects that could result from the action, as described above.

Critical Habitat for the Least Bell's Vireo

Critical habitat Unit 2 comprises approximately 4,409 acres, of which approximately 2,252 acres are within the RMDP area. Of those 2,252 acres, approximately 1,408 acres are within the

footprint of the proposed development (the Specific Plan area). For its proposed development, Newhall selected areas within the RMDP and the critical habitat where native habitat has been replaced by other uses, such as agriculture, cattle grazing, and oil production. Most of these are upland areas which do not support the PCEs of least Bell's vireo critical habitat. According to the response to a comment in the final rule concerning refinement of the critical habitat, "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 Service. Thus, designation of critical habitat will not effect [sic] those areas within the legal critical habitat boundaries that do not contain vireo nesting or foraging habitat." (59 FR 4845).

According to the Final EIR/EIS (Corps and CDFG 2010), a total of 443 acres of the 2,252-acre critical habitat unit within the RMDP area supports the primary constituent elements of critical habitat for the least Bell's vireo. The remaining 1,809 acres are agricultural fields, or are in oil production or other uses that have removed the natural vegetation. 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, alluvial scrub, sagebrush scrubs, chaparral, and coyote brush scrub) and woodlands (coast live oak, valley oak) within 100 feet of nesting/foraging habitat that may be used for foraging, especially in the latter part of the breeding season.

Overall, the construction of RMDP facilities and build-out of the Specific Plan area will result in the permanent loss of 62 acres of the 443 acres of critical habitat containing primary constituent elements. An additional 49 acres of critical habitat that contain the primary constituent elements, 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. Restoration and enhancement components of the RMDP would create an additional 139 acres of riparian/wetland habitat in the Santa Clara River corridor within the critical habitat unit.

In addition to the direct habitat impacts described above, implementation of the proposed RMDP and build-out of the Specific Plan could also potentially modify natural watershed and stream hydrologic and geomorphologic function/processes within the action area by increasing volumes and duration of flow via increased runoff from impervious surfaces and drainage infrastructure. Increased flow could also result in the modification of riparian communities. Sediment-transport modeling by Pacific Advanced Civil Engineering determined that the total floodplain area within the Santa Clara River exposed to potentially erosive velocities would increase for only the five-year and 20-year flood events (PACE 2010). These changes to stream hydrology and geomorphic function/processes could adversely affect the primary constituent elements for the least Bell's vireo by changing the vegetative structure in certain areas; however, the Santa Clara River system is naturally subject to a flood/scour/regrowth cycle and the changes that could occur to the PCEs at these locations would be masked by the normal processes. Localized erosion could result from high flow around outlet structures, access ramps, and bridge abutments. These adverse effects would be offset by a decrease in acres exposed to erosive velocities in two-

year, 10-year, 50-year, 100-year, and capital flood events (PACE 2010). Consequently, the critical habitat unit and its function should remain intact and not be substantially affected by changes to the hydrology of the watershed.

As noted here and in the Environmental Baseline, of the 2, 252 acres of the critical habitat unit within the action area, only 443 acres within the action area support the PCEs. Approximately 62 acres of this 443 acres (14 percent) would be permanently lost due to the proposed actions The additional 49 acres of critical habitat that would be temporarily affected would be restored, as well as an additional 139 acres that do not currently support the PCEs. We conclude that the permanent loss of the 62 acres and temporary loss of 49 acres would be offset by successful restoration/creation of 139 acres of riparian/wetland habitat in the Santa Clara River corridor in the critical habitat unit (the success of restoration would be monitored and reported to the Corps and CDFG pursuant to the measures proposed by the applicant, see Appendix B), and that the recovery function of the critical habitat unit will remain intact.

Summary of the Effects on the Least Bell's Vireo and Southwestern Willow Flycatcher
Because we do not expect any direct impacts to least Bell's vireos, and indirect effects to only 4 known territories, we have concluded that the proposed project would not reduce the reproduction, numbers, or distribution of the species to the point where it would reduce appreciably the likelihood of the species' survival and recovery. In addition, the applicant has proposed numerous measures to protect and restore suitable habitat for the least Bell's vireo and these measures should further reduce the impacts of the project on the species. Similarly for the southwestern willow flycatcher, because none have been recorded nesting in the action area, the few observed have likely been migrants, and much of the suitable habitat for the species would remain intact, we also do not expect the RMDP project to reduce the southwestern willow flycatcher's reproduction, numbers, or distribution in the wild or adversely affect recovery of the species.

For the critical habitat of the least Bell's vireo, we conclude that the loss of a small proportion of the unit would not interfere appreciably with the survival or recovery function of either the unit or the entire critical habitat designation. The lost habitat is at the periphery of the unit's boundaries and not in a location where it would fragment the critical habitat unit or result in the loss of the function of the critical habitat. The majority of the critical habitat would continue to support the PCEs where they currently exist and provide habitat for the recovering least Bell's vireo population. Also, considering the entire critical habitat designation of 38,000 acres statewide, the proposed effects are relatively small and should not diminish the value of the critical habitat overall for recovery of the species. While the critical habitat rule does not define any specific conservation function for this unit, we ascribe to the unit the same function as the overall designation, which is to conserve known populations of least Bell's vireo through the section 7 consultation mechanism. Given the relatively small impact of the RMDP project on least Bell's vireo and the restoration efforts incorporated into the project that will create PCEs within the unit where they currently do not exist, we conclude that the recovery function of the critical habitat designation will not be diminished. The number of acres within the unit with

functioning PCEs will increase as a result of implementation of the project following restoration of up to 139 acres of riparian habitat (compared to approximately 62 acres permanently lost). We therefore conclude that the proposed action is not likely to appreciably diminish the value of critical habitat for the survival or recovery of the least Bell's vireo.

California Condor

California condors are highly social, inquisitive, and intelligent animals, and by nature are attracted to areas of activity. In the early years of release, California condors showed little wariness of humans and human structures because there were no older wild mentor birds in the release population. Young newly released California condors were attracted to houses and other human structures where they found objects and items to stimulate their curiosity. They also showed little fear of humans. A great deal of effort was expended flushing and hazing birds from human habitation, and with regard to a number of individuals, this procedure was effective; however, at least 19 birds strongly exhibiting this human attraction behavior had to be permanently removed from the wild and placed in the captive breeding program.

Evidence from monitoring this behavior suggests that some California condors, depending upon the individual condor's tendencies, may continue to exhibit their attraction to humans and human structures, while others may react to the hazing or other deterrent actions, and begin to spend less and less time around humans and human habitation. Birds that do not react to discouragement techniques become habituated to humans and their activities, and seem to be drawn to close contact with humans. California condors that become attracted to human activity and structures are more susceptible to being shot, fed harmful foods, being struck by vehicles, ingesting toxic substances (e.g., coolant, rodenticides), collisions with structures, ingesting microtrash, and other forms of injury.

California condors that do not respond to deterrence must be removed from the wild for their own safety and to minimize the transference of such behaviors to other members of the flock. Such individuals are no longer part of the wild flock and cannot contribute to the species' survival and recovery in the wild. While physical injury to a condor in the traditional sense may not always occur, such as injury due to ingestion of harmful foods (i.e., foods that do not meet the condor's nutritional requirements, such as dog food or cooked meat), the habituation of condors to human presence nevertheless injures condors because habituation significantly disrupts essential behavioral patterns of individual birds and prevents them from surviving successfully in the wild. For instance, a habituated bird may seek out humans for proffered food rather than forage and hunt in the wild for carrion. The ability to successfully forage and hunt for food is essential for the survival of a condor in the wild. Habituation interferes with feeding and other essential behaviors and compels the capture of the bird for its own safety and the safety of other condors. We thus consider habituation necessitating capture of a condor as an injury to the bird – a form of "harm" within the definition of take under the Act. The removal of an individual from the wild flock also harms the species as a whole because it reduces the size of an already small wild population while it struggles to recover. The individual may still contribute to recovery of the species through participation in the captive-breeding program;

however, the goal of recovery is wild reproduction, to which birds remanded to captivity do not contribute.

The applicant has proposed minimize the potential for habituation by having a qualified biologist with knowledge of California condors to monitor construction activities within the action area. The biologist would be present at all times during clearing and grubbing of construction areas. During mass grading, construction sites would be monitored on a daily basis. The authorized biologist would have the authority to stop all activities until appropriate corrective measures have been completed. If condors are observed landing in the action area, the applicant would avoid further construction within 500 feet of the sighting until the animals have left the area, or as otherwise authorized by CDFG and the Service. All condor sightings in the action area are required to be reported to CDFG and the Service within 24 hours of the sighting. Should condors be found roosting within 0.5 mile of the construction area, no construction activity would occur between one hour before sunset to 1 hour after sunrise, or until the condors leave the area, or as otherwise directed by the Service. 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 the Service.

To further protect California condor from negative interactions with humans and/or artificial structures, the applicant (or the applicant's agents managing the preserved open space) would remove dead cattle that are found or reported within 1,000 feet of a residential or commercial development boundary. Dead cattle would be relocated to a predetermined location within the High Country SMA or Salt Creek area. The locations where carcasses would be placed would be a minimum of 1,000 feet from a development area boundary. Appropriate locations for transfer of carcasses include open grasslands and oak/grassland areas where condors can readily detect carcasses and easily land and take off without encountering physical obstacles such as powerlines and other utility structures. The proposed locations would be selected and approved by the CDFG and the Service. Pursuant to this measure, a telephone number for reporting dead cattle would be provided and actively maintained. Any cattle carcasses transferred to the relocation areas would be reported to the Service.

The measures outlined above would help minimize the potential for condors to become habituated to new structures in the action area. However, over the 25-year period that this biological opinion is in effect, we cannot rule out the likelihood that such habituation would still occur. We do not think habituation would be a frequent event because condors only rarely occur in the action area, and even then such visits mainly occur when they are attracted to a food item. The measures to move carcasses away from development should reduce those instances. But condors remain intelligent and curious, and as their population increases and they expand their exploration of their historical range, we think at least one instance of habituation may still occur within the 25-year period.

Irrespective of the potential for habituation, garbage and debris left out by construction workers while conducting project activities could be detrimental to California condors. Such small items

include: bottle caps, nails, screws, nuts, washers, rags, electrical components, and wire. California condors have been known to ingest these and similar items. Between 2001 and 2010, of the 29 California condor chicks hatched in the wild, 25 were determined to have micro-trash in their digestive tracts, 10 died as a result, others were removed from the wild for recuperation, and two had emergency surgery and were returned to the wild (Service 2010a). Newhall has proposed to require that all construction areas be kept clean of debris, such as cable, trash, and construction materials. The applicant proposes to collect all microtrash and litter, vehicle fluids, and food waste from construction areas on a daily basis. Workers would be trained on what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash. These measures should avoid microtrash ingestion by California condors at construction sites.

California condors may collide with exposed power lines erected to deliver power to development areas. Powerlines that span canyons or are located along ridge lines would be the most dangerous for flying California condors. Collision with power lines has been one of the leading causes of recent California condor injury and mortality, especially for young birds. Six immature California condors have been recovered below power lines in southern California, three of those near the Hopper Mountain National Wildlife Refuge; another five condors have collided with power lines in the northern portion of their range in Central California. Several of these were near the Ventana Wilderness Area. California condors can also be electrocuted by power lines if the lines are spaced too closely.

The applicant proposes to install utility poles, phone, and cell towers in conformance with APLIC standards for collision-reducing techniques (APLIC 2006). The effectiveness of the APLIC guidelines may depend upon the location of new powerlines; the measures are less likely to be effective where the powerlines span canyons or are located along ridgelines where California condors are more likely to be soaring due to favorable wind patterns. To that end, the proposed avoidance and minimization measures state that the location of powerlines would be coordinated with CDFG and the Service[3] to ensure that new powerlines and poles in the High Country SMA (where condors are most likely to occur) would be situated where collisions by condors would be avoided. Because the Service and CDFG would not approve any towers or powerlines that would pose a collision hazard to condors, combined with implementation of the APLIC guidelines, we conclude that the potential for such collisions to occur is eliminated. Although condor use of the area is currently low, we expect that use to increase as the population gets larger and the birds explore more of their historical range. Consequently, we will take any increased use of the action area into consideration if powerline or tower installation is proposed in areas that could be used by condors.

The proposed project would result in the loss of some foraging habitat for the California condor within the RMDP area (i.e., condors fed on calf carcasses in Potrero Canyon in 2008 and 2009).

[3] The original measure (BIO-81) did not include the Service. The applicant agreed upon consultation to include the Service in the approval process so that this agency would be satisfied that collision potential was eliminated. BIO-81 has been revised in Appendix B to reflect the changes.

Construction activities and the corresponding removal of cattle from the lower canyons and urban development would eliminate foraging options; however, much of the canyon landscape within the action area is marginally to severely degraded and only small sections are now conducive to grazing range for cattle. Until recently, the few historical records of condor feeding were restricted to the upper elevations (Tapo Canyon and Ridge on the eastern edge of the Ranch property boundary) and with the removal of cattle from the lower canyons only upper elevations would remain available foraging habitat for condors. The protection of the oak-savannah upper elevations (High Country SMA and Salt Creek Area) in permanent conservation easements and ownership in the amount of 5,722 acres would continue to provide suitable foraging habitat for condors, especially if these areas are managed for cow/calf operations. A native deer population should provide some feeding opportunities in the preserved lands.

The proposed action includes measures intended to avoid and/or minimize most of the adverse effects described above. We believe the measures should reduce the potential for most these effects on the California condor; however, we believe that despite the measures proposed by the applicant, condor attraction to new structures and human activity in proximity to known foraging and feeding areas may lead to habituation during the 25-year life of this biological opinion, and that such habituation is itself a form of injury to the bird and would necessitate the removal such birds from the wild.

The recovery plan for the California condor focuses on: (1) increasing reproduction in captivity to provide condors for release, (2) release of condors to the wild, (3) minimizing condor mortality factors, (4) maintaining habitat for condor recovery, and (5) implementing condor information and education programs. None of these recovery activities were identified within the action area. The proposed action does not involve captive breeding programs or the release of condors into the wild, and is therefore neutral as to tasks (1) and (2). The proposed action is also neutral as to task (5), although the research required in evaluating the action has increased the amount of publicly-available information on the California condor.

Although none of recovery activities were identified for the action area in the recovery plan, the proposed action does have the potential to affect tasks (3) and (4) – minimizing condor mortality factors and maintaining condor habitat, respectively. As to the first, the major mortality factor affecting the species is lead poisoning, followed by collisions with human structures and ingestion of microtrash. The project area lies within the area of California covered under AB 821, the Ridley-Tree Condor Preservation Act, which prohibits the use of lead hunting ammunition, the leading source of lead poisoning among condors. In addition, hunting of all types will be prohibited in the entire project area, including the High Country SMA and Salt Creek area where condors are most likely to opportunistically forage. Further, the proposed action includes mitigation measures that we anticipate will eliminate the likelihood of bird collisions and microtrash ingestion, including: design and construction of utilities per Avian Power Line Interaction Committee (APLIC 2006) guidelines and operated with anti-perching devices to help reduce collisions and electrocutions of California condors; maintenance of construction areas free of microtrash and other debris; and biological monitoring by a qualified

biologist during construction activities (URS 2010). Therefore, the proposed action will complement efforts to minimize condor mortality factors.

With respect to maintaining condor habitat in the RMDP area over the long term, the proposed action will cause the loss of known foraging/feeding areas for the condor. Construction activities and the corresponding removal of cattle from the lower canyons and urban development would eliminate foraging options in some of the lower canyons; however, much of the canyon landscape within the action area is marginally to severely degraded and only small sections are now conducive to grazing range for cattle. Until recently, the few historical records of condor feeding were restricted to the upper elevations (Tapo Canyon and Ridge on the eastern edge of the Ranch property boundary) and with the removal of cattle from the lower canyons those upper elevations would remain available foraging habitat for condors. The protection of the oak-savannah upper elevations (High Country SMA and Salt Creek Area) in permanent conservation easements and ownership in the amount of 5,722 acres would continue to provide suitable foraging habitat for condors. A native deer population should provide some feeding opportunities in the preserved lands, and that may be supplemented with current cow/calf operations. While we do not have exact figures for how much foraging/feeding habitat would be lost because condors are opportunistic feeders and can forage over a wide variety of habitat, we believe the lost foraging/feeding habitat is relatively small in comparison to the permanent conservation easements in the High Country SMA and Salt Creek Area totaling more than 5,700 acres.

Summary of Effects on the California Condor

In summary, we conclude that although the proposed project would have some effects on the California condor, we do not believe the impacts would be substantial. The proposed project does introduce urbanization into a currently undeveloped landscape; however, the areas to be developed consist of marginal to severely degraded habitat that provides very limited foraging opportunities for the condor. The condor should continue to expand its use of higher value historical habitat that would be preserved by the project in the High Country SMA and Salt Creek areas, and should occasionally find food during routine foraging bouts over the area. Although there is some potential for individual birds to become habituated, we expect it to be an infrequent occurrence for the reasons cited earlier. With incorporation into the proposed action of various measures to protect the condor and higher quality condor foraging habitat, we do not expect that the action will reduce the reproduction, numbers, or distribution of the species, or impede its recovery.

Arroyo Toad

The analysis of effects of the proposed project on the arroyo toad is hypothetical. The species has not been observed in the action area during aquatic surveys for the last 10 years; however, we do have historical records of its presence and recent observations nearby the action area that indicate the potential for the species' presence during the 25-year permit term.

Development activities could kill, injure or otherwise displace arroyo toads from suitable habitat that are present within the RMDP area. Construction actions have the potential to cause mortality, limit foraging and breeding, and to exclude arroyo toads from portions of the area. Maintenance of bridges and of flood, drainage, and water quality protection features may have similar effects. Development is expected to result in the permanent and temporary losses of suitable arroyo toad habitat.

Implementation of the proposed RMDP would include the construction of bridges and bank stabilization within areas of the Santa Clara River containing high-quality arroyo toad habitat. Maintenance of these features and of other flood, drainage, and water quality protection features, may also result in effects to this habitat. Other construction activities would occur in areas containing moderate- to low-quality habitat. Additionally, build-out of the Specific Plan area would include construction in riparian and upland habitats potentially occupied by arroyo toad. These changes to habitat could result in displacement of individuals, interruption of breeding, and reduction in the availability of habitat for any members of the species present in the action area.

Construction of these features associated with both the RMDP and build-out of the Specific Plan area would require movement of people and equipment in construction areas. Any arroyo toads present could be killed or injured, either on the ground surface or in their burrows, by vehicles and heavy equipment associated with bank stabilization activities, repair, and maintenance. Trench excavation and berm removal could injure or kill arroyo toads by crushing them at the surface or within their burrows. Foot traffic by workers associated with the construction activities, biological surveys, and restoration activities could kill or injure arroyo toads. Revegetation activities involving the use of augers to dig holes for plantings could kill arroyo toads within burrows. The potential for arroyo toads to be killed or injured during these activities would be greatest within riparian habitats when workers are concentrated in those areas, or at night along the access roads and sandy areas when arroyo toads are either actively foraging or moving to or away from the Santa Clara River. The applicant has proposed to have a qualified biologist survey for and relocate any arroyo toads found in construction areas. This measure should reduce the potential for arroyo toads to be killed or injured by people or equipment; however, it is unlikely that if the species is present, all individuals could be detected. Although such effects could result from the proposed action, we do not expect injury or mortality to occur because no arroyo toads have been observed in the action area in approximately 10 years.

Build-out of the Specific Plan area would 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 both within the RMDP area and downstream. Increases in surface runoff could affect any arroyo toads present in the action area by disrupting breeding if flow rates were too high to allow eggs and tadpoles to remain in place. Increased water flows could also cause sedimentation which would bury eggs or displace adults and juveniles. Although such effects to individual arroyo toads could result from the proposed action, we do not

expect them to occur because no arroyo toads have been observed in the action area in approximately 10 years.

The RMDP could affect arroyo toads downstream of work areas through short-term hydrologic or water quality alterations of the river during construction. In addition, RMDP-related work could disperse sediments and pollutants from construction on upland portions of the site into the Santa Clara River. Hydrologic and water-quality-related impacts could include changes to the base flows, changes to the timing and duration of flood flows, discharges of chemical pollutants, increased turbidity and sedimentation, and changes in water temperature due to short-term changes to the active channel morphology. As described above, increases in surface runoff could affect arroyo toads by disrupting breeding if flow rates were too high, and increased water flows could also cause sedimentation which would bury eggs or displace adults and juveniles; however, the Corps and Newhall have proposed avoidance and minimization measures, as well as BMPs (i.e., erosion and sedimentation controls), including restoration of disturbed areas, removal of exotic vegetation and predators, and preservation of existing habitat, which we believe will avoid or reduce the effects on hydrology and water quality alterations on the arroyo toads it the species if found within the action area.

A study by PACE (2010) addressed issues related to the long-term hydrology and geomorphic function of the river and potential long-term impacts. Sediment-transport modeling in the study determined that, with the build-out of the RMDP components and Specific Plan land uses, the total floodplain area exposed to erosive velocities would be lower in most storm events and that, overall, there would be no significant change in erosion and sediment deposition, within the action area or downstream. The study also showed that RMDP components would result in a net decrease in the degradation of geomorphic function on the river. In addition, the impacts of RMDP on Santa Clara River vegetation are expected to be minor, both within the action area and downstream of the action area. Regarding water quality issues, compliance with the construction general permit (Order No. 99-08-DWQ) mandates that construction-related non-stormwater discharges do not cause or contribute to violation of any clean water standards. Project Design Features of the RMDP would reduce stormwater pollutant levels in the long term. The PACE (2010) study also concluded that there would be no significant impacts in water flows, velocities, depth, sedimentation, or floodplain and channel conditions downstream of the RMDP area as a result of the proposed project. These hydraulic effects were also found to be insufficient to alter the amount, location, and nature of aquatic and riparian habitats within the RMDP area. PACE (2010) has 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 Santa Clara River that support the arroyo toad should be maintained, and any populations found within the river corridor would not be substantially affected. Assuming the PACE (2010) study is correct, combined with the avoidance and minimization measures proposed by the applicant, we conclude that the potential effects to the arroyo toad from changes in the stream hydrology and water quality would be minor, and that the remaining potential habitat for the species would continue to support the species if it were present.

The occupancy of the Specific Plan area, over the long term, could result in adverse secondary effects to arroyo toads, if found within the action area . Specifically, the proximity of urban development to suitable 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 pets, stray, and feral cats and dogs as well as other mesopredators (see Crooks and Soulé 1999); collecting; 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 plants (e.g., giant reed, tamarisk, and pampas grass) and wildlife species (e.g., bullfrogs, African clawed frogs, exotic fish, and crayfish); and increased risk of roadkill on roads adjacent to any occupied areas, particularly at proposed culvert crossings where vehicles would cross the site's smaller tributary drainages. The applicant has proposed to remove exotic predators and maintain suitable habitat within the Santa Clara River, as well as restrict human access to open space through well-defined trials and restrictions. These measures should be effective at avoiding and minimizing the effects on any toads present in the action area.. Further, because no arroyo toads have been observed in the action area in approximately 10 years of surveys, we have no evidence to suggest that these effects would decrease the numbers or distribution of the arroyo toad.

Project-related noise and activity near habitat occupied by arroyo toads could disturb individuals to the extent that foraging and burrowing behavior could be altered. Although the site is not expected to be fully restored for several years following construction activities, restoration of the site and removal of invasive, exotic vegetation, as proposed by Newhall, would help minimize any potential long-term effects of the project on the arroyo toad related to habitat degradation.

Temporary effects to any arroyo toads present in the action area would result during installation of the bank protection and preparation of the 85-foot construction zone required for bridge construction. When heavy equipment is used in proximity to aquatic habitats, the potential exists that these sensitive areas may be destroyed or degraded. The direct placement of material or runoff of sediments generated by the project into aquatic habitats can result in the loss of habitat values through filling or in the degradation of water quality. Arroyo toads are likely to be particularly sensitive to both direct filling of streams and sedimentation; the shallow pools this species requires for breeding can be destroyed by the addition of relatively small amounts of material, either by direct filling or by the alteration of the sandy and gravelly substrata that the arroyo toad requires. Arroyo toads may also be particularly vulnerable to the release of toxic materials because they generally use aquatic habitats with low flows; under such environmental conditions, toxins may be more concentrated and lethal. Additionally, the slow flows associated with breeding pools may increase the likelihood that fine sediments carried into the pools would remain there smothering eggs and tadpoles.

Runoff from areas where concrete is being used to mix with the soil cement could cause increases in water pH. Substantial increases would kill all life stages of the arroyo toad for some distance downstream of the release; a release of such materials resulted in mortalities of arroyo toads in Mono Creek in the Los Padres National Forest in the early 1990s. The rate of water

flow and amount of released material would affect the distance over which the pH would be altered. Because such effects could extend far beyond the actual work area, this has the ability to affect a larger number of arroyo toads. Equipment storage, maintenance, and staging areas would be located on upland sites and away from the any surface flow. These measures would be effective at reducing the potential for arroyo toad mortality and would reduce the likelihood that toxic materials would inadvertently reach aquatic habitat.

Project personnel associated with the project could travel outside of areas where work is occurring; such activities, particularly with vehicles, could kill or injure arroyo toads and damage their habitat. Flagging of the construction areas may help reduce intrusions. Careless workers could release toxic materials, leave garbage that would attract predators of the arroyo toad, or conduct activities outside of designated areas. Newhall has proposed to limit construction activities in the river bed, and define and mark the limits of project disturbance. These measures should be effective in reducing direct mortality or injury of arroyo toads during bridge and bank protection installation.

Biologists conducting surveys and project monitoring could transmit diseases carried on field equipment and gear used in other places. In some cases, these introduced diseases have had catastrophic effects on amphibian populations. Some evidence exists that other environmental stresses, such as the introduction of chytrid fungus, may exacerbate the effects of diseases on amphibians (Fellers et al. 2001). Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus only attacks the parts of an animal's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. It can decimate amphibian populations, causing fungal dermatitis, which usually results in death in 1 to 2 weeks. Infected animals may spread the fungal spores to other ponds and streams before they die. Once a water body has become infected with chytrid fungus, the fungus stays in the water for an undetermined amount of time. Infected equipment or footwear could introduce chytrid fungus into areas where it did not previously occur. If this occurs in the action area, any arroyo toads present could be affected. The potential for transfer of chytrid fungus on equipment would be effectively reduced or avoided by implementing the declining amphibian population task force code of practice as proposed by the Corps and Newhall (a copy of the guidelines is attached as Appendix C).

Arroyo toads present in the action area in various life stages could be affected by trampling while the site is being accessed, or by installation of fencing material. Impacts to arroyo toad egg masses and tadpoles would be most severe if fencing were installed through occupied breeding pools. Newhall proposes to survey the construction area, including breeding pools, and monitor construction activities in order to avoid arroyo toad egg masses and tadpoles to help reduce the likelihood of arroyo toad deaths. Following the construction of bridge and bank protection, the affected reach of the creek would lack streamside vegetation. This may allow invasive, exotic vegetation to establish and become dominant in the project area, reducing habitat for the arroyo toad. To prevent the spread of exotic vegetation in the project site, Newhall would remove

exotic vegetation from the project area during grubbing operations, and monitor and control infestations of exotic vegetation infestation in the project area during the planned restoration of the riparian habitat.

Some actions proposed by Newhall may involve the use of herbicides to control or eliminate non-native plant species in suitable arroyo toad habitat. The effects of these pesticides and herbicides are not limited to arroyo toad; other aquatic species such the unarmored threespine stickleback may be adversely affected as well and this discussion applies to both species. If Newhall uses herbicides, glyphosate (formulated as Rodeo® or Aquamaster®) is probably the most likely herbicide to be used. Glyphosate is the active ingredient in a variety of herbicides including Roundup®, Rodeo®, Aquamaster®, Buccaneer®, Glyfos®, Honcho®, Touchdown®, Vision®, Duramax®, Rattler®, and others. Glyphosate is a systemic herbicide that will kill broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the synthesis pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). Most glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The surfactant associated with many glyphosate products is a polyethoxylated tallowamine (POEA) surfactant.

Arroyo toad egg strands, tadpoles, juveniles and adults and all life stages of unarmored threespine stickleback may be exposed to glyphosate products and POEA surfactants in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The half-life of glyphosate in pond water ranges between 12 days and 10 weeks (Extoxnet 1996). Additionally, juvenile and adult arroyo toads can also be exposed to glyphosate in terrestrial habitats that have been treated. Glyphosate and POEA readily binds to soil particles and can be degraded by microbes in 7 to 70 days depending on soil conditions (Giesy et al. 2000). The half-life of glyphosate in soil can range from three to 249 days and the POEA surfactant in Roundup has a soil half-life of less than one week (USFS 1997).

No information is available regarding the toxicity of glyphosate products specifically to arroyo toads or unarmored threespine stickleback. Studies exploring the lethal and sublethal effects of glyphosate products on other amphibians or fish, including similar frog species classified in the same genus as the arroyo toad (*Anaxryus*) are available but are largely focused on aquatic life stages of the species and formulations of glyphosate that include surfactants. Roundup Original Max®, a glyphosate product with POEA surfactant, was demonstrated to be moderately to highly toxic to nine species of frog and toad tadpoles (Relyea and Jones 2009). Mann and Bidwell (1999) also found evidence of acute toxicity to four Australian frog species exposed to Roundup, ® while the isopropylamine (IPA) salt of glyphosate (the active constituent in Roundup®) was found to be non-toxic. The mortality of tadpoles is hypothesized to be caused by the lysis of gill cells from exposure to surfactants (Lajmanovich et al. 2003, Edington et al. 2004) resulting in either to asphyxiation or loss of osmotic stability (Able 1974) indicating that the life stage during

which frogs and toads have gills may be particularly vulnerable. Glyphosate products containing POEA surfactants have also been shown to have sub-lethal effects to amphibians including decreased size, increased time to metamorphosis, tail malformations, and gonadal abnormalities (Govindarajulu 2008, Howe et al. 2004).

Several studies suggest that the toxicity of glyphosate products is linked with the surfactant, and not the glyphosate. Howe et al. (2004) compared the toxicity of glyphosate alone, to glyphosate with POEA surfactant, and POEA alone, on green frogs. Results indicated that the toxicity of glyphosate with POEA surfactant was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects. In a comprehensive review of studies involving the effects of glyphosate on amphibians Govindarajulu (2008) concluded that the toxic effect of glyphosate products containing POEA are due to the POEA rather than the active glyphosate ingredient.

These studies indicate that glyphosate products formulated with POEA surfactants will likely kill or injure arroyo toads in aquatic habitats, with tadpoles being particularly vulnerable. Because glyphosate and POEA readily bind to soil and sediments, these chemicals may be less available to arroyo toads in terrestrial habitats; however, research is needed to determine toxicity mechanisms and thresholds from terrestrial exposure. Based on the literature (Howe 2004, Govindarajulu 2008), adverse effects to arroyo toads from the use of glyphosate products can be minimized through the use of products that do not contain a surfactant. Formulations that lack a surfactant include Rodeo and Aquamaster, which have been approved by the Environmental Protection Agency, through their registration process, for aquatic use.

A low-toxicity, non-POEA surfactant that works well with Rodeo® or Aquamaster® is Agri-Dex®, produced by Helena Chemicals. We are not aware of any information regarding the toxicity of Agri-Dex® on amphibians, but based on the data available, Monheit et al. (2004) concluded crop oil-based surfactants (i.e., Agri-Dex®) are probably less acutely toxic to fish, aquatic invertebrates and one frog species tested, than some other types of surfactants. The amount of Agri-Dex® that resulted in acute toxicity (i.e., >1000 parts per million (ppm) (Helena Chemical Company 2004, Washington State Department of Ecology and Agriculture 2004) was levels of magnitude higher than other surfactants tested including POEA (1.6 to 0.65ppm in Haller and Stocker 2003, Giesy et al. 2000, Folmar et al. 1979). It is important to note that so called crop oil-based surfactants, which suggest these products are vegetable-based, are actually petroleum products (USFS 1997). There could be sub-lethal adverse effects or long-term adverse effects to arroyo toads from chronic exposure to these chemicals that have not been documented. Overall, Agri-Dex® may be less toxic than other surfactants, but the use of glyphosate without a surfactant is probably even less toxic to the arroyo toads.

Herbicides may be used anywhere within the RMDP area in areas where non-native plants are to be controlled. Within suitable arroyo toad habitat, herbicides are most likely to be used to control giant reed and tamarisk. According to Table 3, the RMDP area supports approximately 5.6 acres of giant reed and 2.8 acres of tamarisk. Therefore, the project could result in the

application of herbicides over 8.4 acres of suitable arroyo toad habitat. This is approximately 0.6 percent of the total suitable arroyo toad habitat in the RMPD area. The removal of these non-native plants would be beneficial to the arroyo toad.

Adverse effects from herbicides may be reduced by measures proposed in section 7 of the RMDP, incorporated here by reference (e.g., Mitigation Measure E-3 requires the use of Rodeo® and Agri-Dex® in certain circumstances). The measures in section 7 of the RMDP are designed to avoid impacts to endangered species and minimize impacts to other riparian resources (Dudek 2010). They include species-specific measures, such as surveying for individuals of the listed species each day prior to beginning work activities and clearly demarcating all treatment areas, to avoid and minimize direct and indirect contact of the herbicides with unarmored threespine stickleback and arroyo toads, if any are present in the area, that are foraging or moving about. If surfactants are required, Newhall will be restricted to using non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use (Dudek 2010) and are the least toxic alternative to aquatic species like the arroyo toad and unarmored threespine stickleback. Combined with the small proportion of suitable arroyo toad habitat that could be sprayed, we believe these measures would be effective at minimizing or avoiding the effects of herbicides on the arroyo toad, if any are found to be present.

According to the Recovery Plan for the arroyo toad, "[t]he recovery strategy for the arroyo toad consists of five parts: 1) stabilize and maintain populations throughout 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" (Service 1999). The proposed action should not impede the recovery of the arroyo with respect to the recovery plan and in general for the following reasons:

As discussed above, few arroyo toads (i.e., a few tadpoles, but no metamorphs, juveniles, sub-adults or adults) have ever been observed in the action area – and none have been observed over 10 years of recent surveys - so the likelihood of direct loss of individuals is low. Nevertheless, the RMDP includes a 17-point protocol for protecting individual arroyo toads in the event they are encountered (Dudek 2010, Mitigation Measure BIO-17). These measures will ensure that if arroyo toads are found within the action area that injury or mortality of individuals would be avoided to the extent practicable.

Habitat for the arroyo toad could be affected by the action, especially if the proposed flood control structures or other facilities change the flow regime in the Santa Clara River; however, these impacts should be minimized by hydro-modification controls, BMPs, and other measures implemented both during construction and post-construction. Such measures include: a Stream Diversion Plan; construction of bypass channels; prohibition of unauthorized operation of equipment in flowing or ponded water; provision of alternative slow-water habitats near river

crossing and bridge construction areas to provide refuge during construction; mud, silt, and other pollutant controls and other BMPs to protect water quality; and biological monitoring during construction by a Service-approved biologist (Dudek 2010, Mitigation Measures BIO-43 through BIO-47, GRR-1 through GRR-8, WQ-1 and WQ-2). Furthermore, the proposed action includes large conservation easements in the River Corridor SMA and Salt Creek area, both of which would benefit the arroyo toad (Dudek 2010, Mitigation Measures BIO-1 through BIO-16). The sum of these measures indicate to us that sufficient habitat to support arroyo toads would remain within the action area following project completion, notwithstanding the fact that the species has not been observed in the action area for approximately 10 years.

To the extent the action may introduce exotic species into suitable arroyo toad habitat, or exacerbate colonization by such exotic species, those impacts will be controlled through the monitoring and removal of exotic plants and wildlife, such as giant reed, bullfrog, and African clawed frog (Dudek 2010, Mitigation Measures BIO-10 and BIO-80). In addition, the action will be subject to controls on the use of herbicidal surfactants, as described above. Therefore, the action should improve the potential for the recovery of the arroyo toad by eliminating, in the action area, one source of the species' rangewide decline.

With respect to recovery task 2) (monitoring of arroyo toad population status), the proposed action advances this goal by requiring monitoring to detect species presence prior to initiation of construction activities. In addition, the mitigation measures imposed for the benefit of the arroyo toad and other riparian species have specific success criteria that must be met. The action also advances task 3), as it creates, enhances, and/or restores riparian and upland areas that may function as habitat for the arroyo toad in the future. (Dudek 2010, Mitigation Measures BIO-1 through BIO-16)

Critical Habitat for the Arroyo Toad

Subunit 6b of the designated critical habitat comprises approximately 1,003 acres, of which approximately 413.1 acres are within the RMDP area. As described in the Environmental Baseline section, Newhall estimates that approximately 71.4 acres within designated critical habitat Subunit 6b do not support the PCEs due to intensive agriculture, oil production, and permanent development. Implementation of the RMDP and build-out of the Specific Plan area would result in the permanent loss of 12.0 acres of the 341.7 acres of designated critical habitat containing primary constituent elements, which represents a loss of 3.8XXX percent of the designated critical habitat with the primary constituent elements in the RMDP area. In terms of impacts to designated critical habitat areas that do not support the primary constituent elements, the RMDP activities would also result in temporary impacts to 30.7 acres, permanent impacts to 28.2 acres, and the remaining 12.5 acres would not be affected by the action. Habitat temporarily affected in both areas (those with the primary constituent elements and those lacking those elements) would be restored to a natural condition.

Summary of Effects on Arroyo Toad
Because arroyo toads have not been detected despite numerous surveys over 10 years within the RMDP area, we do not anticipate that any arroyo toads will be killed or injured by project activities. Because the action area does not appear to currently support the species, and because the applicant has proposed numerous measures to protect aquatic species including the arroyo toad if it is found during activities, we do not expect the proposed action would appreciably reduce the species' reproduction, numbers, or distribution in the wild.

The proposed action, as modified by the RMDP proposed mitigation measures, will not impede recovery of the arroyo toad. Although the Santa Clara River is not directly identified in the Recovery Plan as having a conservation role in the recovery strategy for the species, the proposed mitigation measures would support and facilitate recovery should arroyo toads occupy this area in the future, including protection of suitable breeding and nonbreeding habitat in the River Corridor SMA and habitat management (e.g., water quality, controls on bullfrogs, African clawed frogs, and giant reed).

Because only a small portion of the designated critical habitat would be affected by the project, we do not expect that the function of critical habitat Subunit 6b would be appreciably diminished. The unit should still meet the goal of the critical habitat designation, which is the protection and management of breeding and non-breeding habitat on a watershed basis for the conservation of the species because most of the unit is conserved, and areas that were proposed but excluded from the final rule designating critical habitat are also conserved.

Unarmored Threespine Stickleback
Under the RMDP, Newhall proposes bank stabilization, two bridges, the Newhall Ranch WRP outfall, temporary haul routes, water quality control facilities (including outlet structures/energy dissipaters), viewing platform locations, and habitat enhancement activities within the Santa Clara River. Newhall proposes to construct approximately 29,843 feet of bank stabilization along the north and south banks of the Santa Clara River. Approximately 29,293 feet of buried bank stabilization (i.e., 98 percent of the project total) would be installed in upland areas adjacent to the river. By constructing the majority of the proposed buried bank stabilization in the upland areas, direct impacts to the unarmored threespine stickleback habitat should be minimized; however, the remaining 550 feet of bank stabilization would occur in unarmored threespine stickleback habitat.

Individual unarmored threespine sticklebacks in the RMDP area may be injured or crushed by excavation and construction equipment, construction debris or worker foot traffic during construction activities. The noise and ground vibrations from the operation of heavy equipment during construction activities may disturb unarmored threespine sticklebacks and cause individuals to disperse and possibly be driven into areas where they would be more susceptible to injury or mortality due to predation, vehicular or foot traffic, or falling debris. The effects of these activities would be minimized by the proposed capture and relocation of individual unarmored threespine sticklebacks out of work areas to prevent injury and mortality.

The dewatering and diversion of water for construction projects within the project area could result in the direct mortality of unarmored threespine sticklebacks from desiccation or crushing. The use of blocking nets, as proposed in the RMDP, would prevent unarmored threespine sticklebacks from entering the diversion channel during its construction. With the termination of the above dewatering activities, unarmored threespine sticklebacks could become stranded in the diversion channels or caught in the folds of the proposed plastic sheeting that would line the diversion as the flow recedes. Newhall proposes to gradually step-down water discharges once dewatering is no longer needed so that Service-approved biologists can capture stranded unarmored threespine stickleback and relocate them to a predetermined downstream site. This measure will minimize the effects to unarmored threespine stickleback from dewatering and diversions.

Disturbance of unarmored threespine sticklebacks would occur while capturing and transporting individuals to suitable habitat. Individuals may also be injured or killed in a seine net should it be used improperly, such as if fish remained trapped in the net or out of water for too long. Mortality following translocation may occur given the uncertainty of the survival of unarmored threespine sticklebacks in unfamiliar sites or from injuries and stress to related handling and transportation. These effects would be reduced by clearly marking the boundaries of the work areas and by employing only experienced biologists to capture and handle the species.

Project-related material releases onto channel substrate or into water would result in effects to water quality that may be hazardous to unarmored threespine sticklebacks. Debris falling into the river may also degrade water quality. Water quality in the Santa Clara River could be affected if construction-related chemicals (fuels, lubricants, wastes) are accidentally introduced into the water or are allowed to accumulate in stream soils. As proposed in the RMDP, the implementation of measures to control pollution, such as refueling at designated areas and containment of spilled substances, would reduce these effects. The effects of herbicide use on aquatic species, including the unarmored threespine stickleback, are discussed above under the heading for the arroyo toad.

Employees of Newhall and other personnel associated with the project could travel outside of areas where work is occurring and into adjacent flowing water; such activities, particularly with vehicles, could kill or injure unarmored threespine stickleback. Flagging of the construction areas may help reduce intrusions. Careless workers could release toxic materials, leave garbage and food-related items that would attract predators of the unarmored threespine stickleback, or conduct activities outside of designated areas.

A study by PACE (2010) addressed issues related to hydrology and geomorphic function of the river and potential long-term impacts. Sediment-transport modeling in the study determined that, with the build-out of the RMDP components and Specific Plan land uses, the total floodplain area exposed to erosive velocities would be lower in most storm events and that, overall, there would be no significant change in erosion and sediment deposition, within the action area or downstream. The study also showed that RMDP components would result in a net decrease in

the degradation of geomorphic function on the river. In addition, the impacts of RMDP on Santa Clara River vegetation are expected to be minor, both within the action area and downstream of the action area. Regarding water quality issues, compliance with the construction general permit (Order No. 99-08-DWQ) mandates that construction-related non-stormwater discharges do not cause or contribute to violation of any clean water standards. Project Design Features of the RMDP would reduce stormwater pollutant levels in the long term. Based upon this information, we do not expect any adverse effects to unarmored threespine stickleback as a result of changes to the hydrology, geomorphpology, and water quality.

While the long-term effects of the specific plan build-out described above could lead to the loss of an indeterminable number of unarmored threespine stickleback and an increase in non-native species (Marchetti et al. 2006), the RMDP incorporates measures to minimize these effects. These measures include compliance with NPDES requirements, including the following water quality control facilities: 1) water quality basins; 2) debris basins, located just upstream of the interface between developed and undeveloped areas, primarily to trap debris coming from the upper watersheds (Debris Retaining Inlets [DRI]); 3) detention basins, which are typically sized to capture the predicted runoff volume and retain the water volume for a period of time (usually 24 to 48 hours); 4) catch basin inserts or screens/filters installed in existing or new storm drains to capture pollutants in the stormwater runoff; 5) bioretention, such as vegetated, grassy swales, that provide water quality benefits and convey stormwater runoff; and 6) solids separator units or in-line structures that reduce or manipulate runoff velocities such that particulate matter falls out of suspension and settles in a collection chamber. The overall population status of the species in the watershed would not be substantially altered by the proposed action because the applicant proposes measures to minimize these effects and the majority of the existing habitat would remain intact..

The recovery plan for the unarmored threespine stickleback 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 (Service 1985). 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 action area.

According to the recovery plan, the unarmored threespine stickleback faces three major threats: (1) inadequate or unsuitable stream flows, (2) predation and/or overcompetition by exotic species, and (3) introgression by *G. a. microcephalus* (Service 1985). Each of these threats must be addressed to facilitate recovery of the species. Further, each threat tends to increase in magnitude when the stream habitat on which the unarmored threespine stickleback depends is channelized. In this case, the proposed action contemplates the construction of significant flood control infrastructure in portions of the Santa Clara River used by the stickleback. Should those infrastructure components materially alter the flow regime of the river in these locations, the action could exacerbate existing threats and frustrate recovery of the species.

To avoid this outcome, the proposed action has been designed to minimize its potential to alter flows within the Santa Clara River (Dudek, Mitigation Measures GRR-1 through GRR-8.) Hydrological analyses show that the proposed action should reduce erosion and scour of the River's floodplain, except during the five-year and 20-year flood events (see ENTRIX 2010 study, entitled "Focused Special Status Fish Habitat Assessment and Impact Analysis," attached as Appendix F.5 to Dudek 2010, at 4-2 through 4-6, and 6-13). These same analyses indicate that the action should actually increase the amount of refugia habitat for the unarmored threespine stickleback (i.e., backflows with velocities of less than two cubic feet per second), thus potentially improving the species' ability to survive storm events.

In addition, to avoid harm to individual unarmored threespine stickleback during construction activities, the RMDP includes specific protocols for diverting fish away from construction areas. (Dudek 2010, Mitigation Measures BIO-43 through BIO-47). Pollutants, including those from pesticides should be controlled through BMPs and water quality protective measures set forth in Mitigation Measures WQ-1 and WQ-2, among others.

With respect to threat (2) – invasive species – the project has the potential to introduce such species into habitat used or occupied by unarmored threespine stickleback (Dudek 2010, Mitigation Measures BIO-10 and BIO-80). However, mitigation measures imposed on the action (e.g., BIO-80, control of exotic species) should offset this threat. The success of these measures will be monitored on a long-term basis.

Finally, as to threat (3) – introgression – the proposed action will not cause inundation of the "Dry Gap" that separates the protected subspecies, *G. a. williamsoni*, from *G. a. microcephalus*. GSI Water Solutions' analysis (2008) of post-development conditions within the Dry Gap determined that the future WRP discharge will not affect the seasonality (i.e., ephemeral nature) or duration of flows through the Dry Gap. Potential impacts to unarmored threespine stickleback from genetic introgression are not expected to occur. Therefore, the proposed action should not increase the threat of introgression.

Summary of Effects to the Unarmored Threespine Stickleback

The proposed project, as modified by proposed mitigation measures, should not reduce the reproduction, numbers, or distribution of the unarmored threespine stickleback. The proposed measures will minimize the direct effects to individuals of the species and the current hydrological conditions are predicted to be maintained (PACE 2010). Further, the proposed action includes measures that support and facilitate recovery, including protection, restoration, and enhancement of habitat.

Coastal California Gnatcatcher

The action area supports approximately 4,126 acres of suitable habitat (i.e., coastal sage scrub) for the coastal California gnatcatcher. Approximately 1,350 acres of suitable habitat within the action area would be directly permanently lost as a result of project implementation, representing approximately 33 percent of suitable habitat within the action area for the coastal California

gnatcatcher. A total of 2.3 acres would be directly but temporarily impacted by project implementation.

All project-related activities in the action area (e.g., construction of roads, flood control structures, associated infrastructure, and residential development) could adversely affect coastal California gnatcatchers. These activities could have direct or indirect effects to coastal California gnatcatchers within the action area. As mentioned above in the Environmental Baseline section, we estimate that the action area could theoretically provide suitable habitat for 152 to 343 pairs of coastal California gnatcatchers. Based on the permanent impacts and territory size, suitable habitat for 50 to 112 pairs of coastal California gnatcatchers would be destroyed; however, surveys for coastal California gnatcatcher have not detected any territories within the action area. The applicant has requested that the Corps consider the species present in the action area due to the observation of one individual coastal California gnatcatcher in the action area, the proximity of other observations of the species, and the quality of the habitat in the action area.

The project activities could result in disturbance or possibly direct injury or mortality of any resident or nesting coastal California gnatcatchers present in the area, including, but not limited to disturbance of nesting behavior resulting in unsuccessful breeding and nest formation, abandonment of an active nest by adult birds, mortality of eggs and young birds within a nest, dispersal of adults to other suitable habitat because of temporary loss or degradation of habitat within the action area (1 to 5 years for habitat regeneration in areas of revegetation), and reduction in the value of the habitat for cover and foraging. The loss of habitat for cover, forage, and reproduction could cause individuals to disperse to other suitable habitat. Any breeding pairs or resident coastal California gnatcatchers discovered within the action area would likely relocate to nearby unoccupied suitable habitat, and direct mortality of these birds and direct disturbance to nesting would likely be avoided because of the specific procedures to limit the impact of maintenance and construction activities, which are detailed in the RMDP biological assessment in Appendix B, incorporated here by reference (URS 2010).

Coastal California gnatcatchers are highly territorial and a loss of habitat due to project development outside of the nesting season may cause the birds to seek out another area in which to forage and nest permanently. Such relocation may adversely affect the birds by causing an increase in energy expenditure necessary to locate, establish and defend a new territory. However, to date, we are not aware of any gnatcatcher territories within the action area. Food-related trash and open containers attract raccoons, coyotes, ravens (*Corvus corax*), and other predators of coastal California gnatcatcher. Any increase in normal predation levels could have adverse effects on coastal California gnatcatchers that could potentially occupy the site in the future. This potential impact would be minimized or avoided by the careful control of waste products at all work sites as discussed in the RMDP biological assessment in Appendix B, incorporated here by reference (URS 2010).

The project could indirectly affect suitable gnatcatcher habitat through introduction of non-native plants, increased fire frequency or fire suppression (i.e., brush clearance), the loss of large predators that control the numbers of small and medium predators that prey upon birds (e.g., raccoon, Virginia opossum, striped skunk), and human intrusions.

Summary of Effects on the Coastal California Gnatcatcher

While we estimated that up to 343 pairs of coastal California gnatcatcher theoretically could occur in the action area (based upon suitable) habitat and published range sizes), and that up to 112 pairs could be affected directly by habitat removal, only one individual bird has been observed in the action area over 15 years of surveys. We conclude that that very few, if any, coastal California gnatcatchers are present in the action area and could be affected by the action. While the proposed activities could disturb all coastal California gnatcatchers found to be present within the action area, because we are not aware of any gnatcatchers occupying the action area, the activities are not likely to result in the death of any coastal California gnatcatcher individuals; therefore, the effects on the California gnatcatcher are likely to be minimal. While approximately 33 percent (approximately 1,350 acres) of the suitable habitat in the action area would be lost, that loss constitutes only a small portion of suitable habitat of the entire range of the coastal California gnatcatcher would be affected by the project (approximately 0.2 percent of the rangewide modeled habitat estimated at 639,387 acres; Service 2010b). Consequently, the proposed action should not reduce the reproduction, numbers, or distribution of the species in the wild.

A recovery plan for the coastal California gnatcatcher has not been prepared. According to the Spotlight Species Action Plan for the coastal California gnatcatcher (as described earlier), the action area is not within any regional HCP/NCCP. Therefore, we do not expect the proposed action to interfere with the goals of the SSAP. In general recovery terms, the action area is at the northern edge of the coastal California gnatcatcher's distribution and likely represents the species at the extreme of its historical range. Only one individual coastal California gnatcatcher has been observed in the action area. The single gnatcatcher individual observed in the action area and immediate vicinity indicates that the rangewide recovery of the species is not dependent upon the small number of individuals potentially present within the action area. Approximately 67 percent of the suitable habitat for the coastal California gnatcatcher within the action area RDMP plan area would not be disturbed and would be preserved as open space and remain available to the California gnatcatcher should it eventually colonize this area. We conclude that the proposed action should not appreciably diminish the contribution of the action area to the recovery of the coastal California gnatcatcher.

CUMULATIVE EFFECTS

Cumulative effects are those impacts of future State and private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action would be subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed project. We are unaware of any other

non-Federal actions that are reasonably certain to occur and are likely to adversely affect the least Bell's vireo or its critical habitat, southwestern willow flycatcher, California condor, arroyo toad and its proposed critical habitat, unarmored threespine stickleback, and coastal California gnatcatcher in the action area.

CONCLUSIONS

After reviewing the current status of the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, coastal California gnatcatcher; the environmental baseline; the effects of the action; and the cumulative effects; it is the Service's biological opinion that the Corp's proposed authorization of Newhall to permanently impact approximately 66 acres of Waters of the U.S. for the construction of roads, flood control structures, associated infrastructure, and build-out of the specific plan (i.e., urban development) for the Newhall Ranch Resource Management and Development Plan in the Santa Clara River and several other tributaries near Santa Clarita is:

(a) not likely to jeopardize the continued existence of the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, or coastal California gnatcatcher, and

(b) not likely to destroy or adversely modify the designated critical habitat of the least Bell's vireo or arroyo toad.

We have reached these conclusions for the following reasons:

<u>Least Bell's vireo</u>
Of the 485 acres of suitable nesting habitat for the least Bell's vireo in the action area, 77 acres would be directly, permanently removed by project activities. None of the recorded territories of least Bell's vireo would be affected. The remaining 408 acres would be conserved and, with the exception of areas that would be subject to indirect effects as described in the Effects Analysis and below, we expect the remaining habitat to continue to support known least Bell's vireo territories and to accommodate any population expansion the species experiences. The applicant has proposed numerous measures (e.g., restoration of disturbed areas, removal of invasive exotic plants, etc.) to minimize and mitigate the effects of the habitat loss on the least Bell's vireo and these should be effective at ensuring that the species persists in the action area.

As described in the Effects Analysis section, the proposed actions pose potential indirect effects to the least Bell's vireo. These include effects from noise, non-native predators, fire management, and other causes. The applicant has proposed measures to address these effects; however, indirect effects cannot be completely avoided or minimized to the point where the least Bell's vireo would not be affected. Based upon the 60 dBA contour provided by the applicant as a measure of the extent of indirect effects, as described in the Effects Analysis, of the 56 least Bell's vireo territories recorded in the action area, only four of those territories would be affected

by noise from the project activities (including long-term occupancy). In addition to the indirect effects to known territories, we expect indirect effects to intrude into approximately 2 acres of suitable least Bell's vireo habitat (Dudek 2010), thus potentially interfering with the essential behaviors of additional least Bell's vireos. Put into context of the total available suitable habitat within the action area and the number of pairs of least Bell's vireo that suitable habitat could potentially support, the number of least Bell's vireos that would be affected by indirect impacts is a small proportion of the least Bell's vireo population that could be supported in the action area. We do not expect that the project will appreciably diminish the least Bell's vireo population in the action area as a result of indirect effects.

Because we do not anticipate an appreciable decline in the population of least Bell's vireos within the action area, we also do not believe that the proposed action will appreciably reduce the likelihood of the species' survival and recovery in the wild. The action area represents a small percentage of the known population, so that the minor effects we expect due to the proposed action are not likely to reduce the numbers, reproduction, or distribution of the species. The recovery plan does not define any specific recovery function for the Santa Clara River unit; however, the minor impact to the species as a whole supports our conclusion that the proposed project would not interfere substantially with the likelihood of the recovery of the of the least Bell's vireo.

As noted in the Environmental Baseline, the critical habitat unit of which the action area is a part comprises 4,409 acres, 2,252 acres of which are within the action area. Of the 2, 252 acres of the unit within the action area, 1,408 acres would be permanently lost to development; however, much of this 1,408 acres does not support the PCEs of the critical habitat designation. Newhall has calculated, and we concur, that only 443 acres within the action area support the PCEs. Approximately 77 acres of this 443 acres (17 percent) would be permanently lost due to the proposed actions. We conclude that the loss of this small proportion of the unit would not interfere appreciably with the survival or recovery function of either the unit or the entire critical habitat designation. The lost habitat is not in a location where it would fragment the critical habitat unit or result in the loss of an important element in the function of the critical habitat. The majority of the critical habitat would continue to support the PCEs where they currently exist and provide habitat for the recovering least Bell's vireo population. Also, considering the entire critical habitat designation of 38,000 acres statewide, the proposed effects are relatively small and should not diminish the value of the critical habitat overall.

<u>Southwestern willow flycatcher</u>

Despite surveys, no nesting southwestern willow flycatchers have been recorded within the action area. A few southwestern willow flycatchers have been observed but these birds were not nesting and did not persist through the breeding season so they are assumed to have been transients. As a result, we do not expect any nesting southwestern willow flycatchers to be adversely affected by the proposed project. Because the only direct effect to the species would be the permanent loss of 21 acres of suitable habitat and 2.1 acres of indirect effects, we do not expect that the population of southwestern willow flycatcher in the action area which thus far has

consisted only of transient individuals, to be appreciably reduced by the proposed activities. The applicant has proposed numerous measures (e.g., restoration of disturbed areas, removal of invasive exotic plants, etc.; see Appendix B) to minimize and mitigate the effects of the habitat loss on the southwestern willow flycatcher and these should be effective at ensuring that the species persists in the action area.

Because we do not anticipate an appreciable decline in southwestern willow flycatchers within the action area, we also do not believe that the proposed action will appreciably reduce the likelihood of the species' survival and recovery in the wild. The action area represents a small percentage of the known population so that the minor effects we expect due to the proposed action are not likely to substantially reduce the numbers, reproduction, or distribution of the species.

The recovery plan for the southwestern willow flycatcher indicates that the Coastal California Recovery Unit that comprises the action area requires improved population stability and enhancement of existing habitat. The proposed action includes habitat restoration that is consistent with this goal. The recovery plan also states that delisting would require, in part, a stable population of 25 pairs of southwestern willow flycatcher in the recovery unit. Despite the loss of a small area of suitable nesting habitat, the proposed action would not interfere with this goal as no territories have been recorded within the action area. We have determined that the minor impact to the species as a whole supports our conclusion that the proposed project would not interfere appreciably with the likelihood of the recovery of the southwestern willow flycatcher in the wild.

<u>California condor</u>
In the Effects Analysis section of this biological opinion, we discuss several possible effects to California condors that could result from the proposed action. We conclude that the most likely adverse effect that could arise from the proposed action, for which avoidance and minimization measures would not be completely effective, is habituation of individual birds to human structures or activities. Other effects from the project, such as the loss of potential foraging/feeding habitat and exposure to microtrash, are addressed by the proposed avoidance and minimization measures (e.g., preservation of high elevation habitat, removal of microtrash form construction sites) such that the adverse effects are not likely to have an impact on the species.

While it is possible that individual California condors may become attracted to new development in the RMDP area, we expect that such occurrences would be infrequent because the birds do not visit the area very often and are more likely to be drawn to a carcass and feeding than solely to new human activity. Despite the infrequency at which we expect habituation to occur, we still consider it a possible effect of the proposed development. If such habituation does occur, the individual California condor would have to be removed from the wild and either relocated to an another area to try to break this pattern of behavior, or taken permanently into captivity if the behavior continued. Birds removed from the wild may still play a role in the captive breeding

program, but they would not be a part of the recovering wild flock. Because we expect the measures built into the project will effectively reduce the habituation impacts of the project, , we believe the impact of the project on the California condor as a species would be minimal and would not reduce appreciably the likelihood of the species' survival and recovery in the wild.

Arroyo toad

Very few arroyo toads have been recorded in the action area. The last record was of 6 tadpoles in 2000. Despite numerous aquatic surveys in the last 10 years, no other arroyo toads have been observed in the action area; however, per the survey protocol, as the species has been observed within 0.31 miles upstream of the action area, we assume arroyo toads could be present. Because the numbers are so low, we expect the proposed actions to affect few, if any, arroyo toads. Further, we expect that the loss of the 733 acres of suitable habitat that supports few, if any, arroyo toads, while a fairly large percentage of the available suitable habitat (38 percent) within the action area would not have a substantial effect on the species. The preservation of the remaining 62 percent of the suitable habitat in the action area, restoration of other areas proposed by the project, and the low potential for direct and indirect effects to individual arroyo toads lead us to conclude that the minor effects of the action at the local level will not have an appreciable effect on the arroyo toad, and thus will not result in an appreciable reduction of the reproduction, numbers, or distribution of the species.

The recovery plan for the arroyo toad does not state any specific goal for the Northern Recovery Unit of which the action area is a part. The overarching goal of the plan is to have in place management plans implemented on federally-controlled lands to conserve, maintain, and restore habitat for the arroyo toad. None of those federally-controlled lands are present in the action area; however, the RMDP includes measures that are intended to conserve the physical and biological features that would support arroyo toads. We conclude that the proposed action would not reduce appreciably the likelihood of recovery of the arroyo toad because the action area currently does not support a substantial population of the species and the applicant proposes to implement measures that would contribute to the species' conservation (i.e., habitat restoration, removal of non-native predators, etc.).

As discussed in the Effects Analysis section, the action area comprises approximately 413.1 acres of the designated critical habitat for the arroyo toad. The applicant has calculated, and we agree, that 341.7 acres of the critical habitat within the action area support the PCEs as defined in the final rule (the remaining 71.4 acres are agricultural fields, oil production, or other permanent disturbance). Of the 341.7 acres that support the PCEs, the proposed action would permanently remove 12.0 acres. We do not expect this amount of permanent loss to appreciably reduce the value of the critical habitat, either at the unit level (3.8 percent) or for the entire designation of 98,366 acres (X0.01 percent) because the physical and biological features (PCEs) would remain intact on a vast majority of the designated critical habitat. Also, temporarily disturbed areas and some which do not currently support the PCEs would be restored. The critical habitat unit of which the action area is a part will continue to serve its conservation functions as a connection between the known populations of arroyo toad in tributaries to the Santa Clara River, and to

accommodate natural population expansion and fluctuation. The minor effects of the proposed action should not diminish the ability of the entire critical habitat designation to protect and support the management of breeding and non-breeding habitat on a watershed basis for the conservation of the species. Because the goals of the critical habitat designation would still be met within the action area, we conclude that the recovery function of the entire 98,366 acres of critical habitat would not be appreciably diminished.

Unarmored threespine stickleback

The unarmored threespine stickleback is present throughout the action area within the Santa Clara River where surface flows are present. Numbers of individuals are not a good measure of the effects of the proposed action on the species because they fluctuate widely within and between years, depending upon conditions and the time of year (e.g., more individuals are present following breeding). While we acknowledge that some individual unarmored threespine sticklebacks could be killed or injured by the proposed actions, we believe these small numbers would be masked by the species' normal population fluctuations. Therefore, we look at the area of affected habitat when making conclusions about the survival and recovery of the unarmored threespine stickleback as related to this action.

The Effects Analysis indicates that the proposed action would permanently affect only 550 feet (of approximately 5 river miles) of habitat for unarmored threespine stickleback (i.e., bank stabilization would be installed mostly in upland areas away from unarmored threespine stickleback habitat). Other potential effects (e.g., changes in water quality and quantity, stranding during temporary water diversions, etc.) would be avoided or minimized by the measures proposed by the applicant as described in the Effects Analysis. Therefore, we expect the proposed actions to have only a minor effect on the unarmored threespine stickleback population in the action area. Because the reproduction, numbers, or distribution of the unarmored threespine stickleback in the watershed would not be altered by the action, we conclude that it is not likely to appreciably diminish the likelihood of the species' survival and recovery throughout its known range.

The recovery plan for the unarmored threespine stickleback identifies the stretch of the Santa Clara River within the action area to be one of three significant stretches of habitat for the survival and recovery of the unarmored threespine stickleback. As described in the Effects Analysis section, the proposed action has been designed to avoid changes in streamflows, reduce the number of exotic predators (e.g., African clawed frogs), and to avoid introgression with the more common subspecies which is currently separated from the listed subspecies by a "dry gap" in the Santa Clara River. The proposed action is also intended to protect, restore, and enhance suitable habitat for the unarmored threespine stickleback, which is consistent with the goals of the recovery plan. Because we have already determined that the effects to both individual unarmored threespine sticklebacks and the species' habitat would not be substantial on either a local or range-wide basis, we conclude that the proposed action would not appreciably diminish the species' likelihood of recovery.

Coastal California gnatcatcher

The actual number of coastal California gnatcatchers observed in the action area following 15 years of annual bird surveys is one (1) individual bird. This bird was not located during subsequent focused surveys, so we conclude it was either a transient or at the edge of its territory. In the Effects Analysis, we project the potential for up to 343 pairs of coastal California gnatcatchers in the action area (based upon suitable habitat and published range sizes); however, the action area does not appear to support any resident coastal California gnatcatchers. In other words, while approximately 33 percent of the suitable habitat for coastal California gnatcatchers in the action area would be removed by the project (1,350 acres lost out of 4,126 acres present), this habitat is not occupied by the species (based upon repeated surveys). Therefore, we have determined that the effects to coastal California gnatcatcher within the action area would be minor and the effects to the coastal California gnatcatcher and its habitat would not result in an appreciable reduction in the numbers, reproduction, or distribution of the species. Because this is true at the level of the action area, it is also true when considering the effects to the species rangewide. That is, if the local effects are minor, the effects to the species as a whole would be similarly and proportionately small.

In terms of the coastal California gnatcatcher's recovery, the loss of approximately 33 percent of the suitable habitat for the species within the action area would appear to be substantial. If the suitable habitat areas were known to be occupied by the species, the loss of that much habitat could have the effect of diminishing the numbers and distribution of the species. However, because only one individual coastal California gnatcatcher was observed on the site on one occasion, we conclude that the loss of 1,350 acres of (mostly) unoccupied suitable habitat would not appreciably diminish the species' likelihood of recovery. The large areas of coastal sage scrub habitat that would remain intact (approximately 2,776 acres) within the action area would still be available to support the species and contribute to its recovery if the species should expand into and occupy the to the action area in the future.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the

Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and the Corps must include these measures in any permit issued to Newhall and the applicant must carry out these measures for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps or the applicant fail to implement these terms and conditions, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

This incidental take statement exempts from the take prohibitions of the Act, take of least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher that is carried out in accordance with its terms and conditions. It does not address the restrictions or requirements of other applicable laws.

AMOUNT AND EXTENT OF TAKE

Least Bell's Vireo

We anticipate that take of least Bell's vireos would be most likely to result from habitat loss and indirect effects (e.g., noise). None of the other effects of the project we analyzed are likely to result in take of least Bell's vireos due, in part, to the avoidance and minimization measures proposed to address the project impacts.

Surveys have detected up to 56 territories in the action area; however, none of these territories would be directly affected by the project activities. Although no known territories of least Bell's vireo within the action area would be directly affected by the project, the RMDP and specific plan build out would directly remove 77 acres of habitat that could be used by the least Bell's vireo for nesting and foraging. We do not anticipate that the loss of these 77 acres will directly result in the take of least Bell's vireos because it does not overlap with any of the 56 known territories. Of the 56 recorded least Bell's vireo territories, elevated noise levels (above the 60 dBA noise contour) at the two bridge crossings and due to increased traffic on Highway 126 overlap with 4 of these recorded territories. We assume that the elevated noise levels at these 4 territories could disrupt nesting and foraging behavior, resulting in nest abandonment, which could lead to starvation, predation, and other effects listed in the Effects Analysis. Thus, we anticipate the take of up to 4 pairs of least Bell's vireo (8 individuals). While indirect effects could intrude into other areas of suitable habitat, none of those areas are currently occupied by any of the 56 known territories and we do not anticipate any further take in these areas due to noise and other indirect impacts.

Southwestern Willow Flycatcher
We anticipate that any potential take of southwestern willow flycatcher most likely would result from habitat loss and indirect effects (e.g., noise). None of the other effects of the project we analyzed are likely to result in take of southwestern willow flycatchers, in part due to the avoidance and minimization measures proposed to address the project impacts.

Within the action area, the RMDP and specific plan build out would directly remove 23 acres of riparian habitat that could be used by the southwestern willow flycatcher for nesting and foraging as described in the Effects Analysis section. . However, no nesting territories have recorded in the action area; only individual southwestern willow flycatchers, assumed to be transients, have been observed. Because 359 acres of suitable southwestern willow flycatcher habitat would remain intact (382 acres of suitable habitat minus 23 acres), we assume that other transient southwestern willow flycatchers could easily find adequate foraging or resting habitat in the action area.

We do not anticipate the proposed action will incidentally take any southwestern willow flycatchers. Although the "Effects Analysis" section above indicates that implementation of the proposed action has the potential to cause biological effects to the southwestern willow flycatcher that conform to the regulatory definition of take, the mere potential for take is not a legitimate basis for a take exemption. Since no take is anticipated or exempted, no reasonable and prudent measures and terms and conditions for the southwestern willow flycatcher are provided below. If take is detected during implementation of the proposed action, reinitiation of formal consultation should be requested, and any operations causing such take should cease pending the outcome of the reinitiated consultation.

California Condor
We anticipate that take of California condors as a result of the proposed project would be limited to harm that could occur as a result of habituation to human activity and structures. Condors that become habituated to new development in the RMDP area are vulnerable to injury from collision with powerlines and vehicles, interactions with humans (e.g., shooting), ingesting toxic substances, being fed harmful items, and ingestion of microtrash. While the applicant has proposed measures to reduce the potential for habituation (e.g., removal of animal carcasses at least 1,000 feet from development), the long-term presence of the development and our expectation that as condor numbers increase, they will resume using parts of their historical range more frequently, including the RMDP area, suggests that interactions between humans and condors are likely to occur, and such interactions could result in habituation of a condor.

We further anticipate that habituation will be infrequent. Given the restriction of development to mainly lowland areas that are rarely frequented by condors and the preservation of the higher elevation lands and habitat that the California condors are more likely to use (i.e., foraging, feeding, roosting), interactions with humans should be uncommon. However, habituation that leads to a condor’s removal from the wild flock represents a substantial impact to the individual

bird and to the small population of a species in the initial stages of recovery. Many of the historical threats to the California condor have been addressed (e.g., DDT, lead poisoning), but as the number of condors in the wild increases, new unhealthy and potentially dangerous behaviors are observed, such as habituation, and require new techniques to remedy.

Even though we believe the number of condors that will become habituated to human activity as a result of the RMDP project would be low, we cannot precisely determine what that number would be. For the purpose of providing a level at which reinitiation of formal consultation would be triggered, we anticipate that no more than one (1) California condor will become habituated within the 25-year period during which this biological opinion is in effect. This number takes into account the the condors infrequent use of lowland areas where development will occur within the action area, the natural likelihood that condors will interact with humans, and the measures the applicant has proposed to minimize such interactions and prevent habituation.

Further, because considerable uncertainty exists regarding the extent of future condor use of the RMDP area, in the face of an expanding wild condor population that appears to be recolonizing areas of its historical range, we have determined that the level of take should be conservatively estimated and be protective of the species' recovery.

Arroyo Toad

Arroyo toads have not been reported in the action area, despite numerous aquatic surveys, since 6 tadpoles were observed in 2000. Based upon the most recent survey data indicating the species is not present, we would anticipate that none (0) would be taken as a result of construction, maintenance, and restoration activities because none have been reported since 2000. While we assumed the species is present for the effects analysis and jeopardy determination (based upon past observations and the presence of individuals upstream of the action area), we cannot extend that assumption to anticipating take because we have no basis for determining the numbers or locations of individual arroyo toads that are not observed. If any arroyo toads are found dead or injured as a result of construction, maintenance, or restoration activities, the action should cease until the Corps reinitiates formal consultation and that process is concluded.

The applicant has proposed to capture and relocate any arroyo toads encountered during project activities that could be affected by the actions. The purpose of this measure is to avoid and minimize any injury or mortality to individual arroyo toads. Because no arroyo toads have been recorded in the action area since 2000, we would expect that none would be captured and relocated. Consequently, if any arroyo toads are found in the project area, all activities should cease until this biological opinion is amended to account for such take.

Unarmored Threespine Stickleback

Based upon the Effects Analysis and the avoidance and minimization measures proposed by the Corps and applicant, we anticipate that take from the proposed action will result from individual unarmored threespine sticklebacks being killed or injured by equipment or foot traffic during

work in the river (i.e., bridge and bank stabilization installation), entrainment in pumps during de-watering and diversions, and as a result of capture for relocation purposes. We do not anticipate that take will result from the other effects analyzed (i.e., water quality changes, non-native predators, etc.).

We cannot determine the precise number of unarmored threespine sticklebacks that may be killed or injured as a result of the construction, maintenance and restoration activities in the Santa Clara River authorized by the Corps. Numbers and locations of unarmored threespine sticklebacks within a population vary from year to year. Because the Corps and Newhall have proposed to use numerous avoidance and minimization measures (see Appendix B), we anticipate that few, unarmored threespine sticklebacks are likely to be killed or injured during this work.

Despite our inability to anticipate a precise number of unarmored threespine sticklebacks that would be killed or injured during construction, maintenance, and restoration activities, we must determine a reasonable number for the purpose of establishing a limit that would trigger reinitiation of formal consultation. The considerations we used in arriving at that number include: (1) the unarmored threespine stickleback population can fluctuate greatly in number of individuals; (2) dead or injured individuals are difficult to detect, so that any that are found dead or injured may represent a larger impact to the population; (3) some unarmored threespine sticklebacks may be killed or injured by equipment or foot traffic and during pumping of water for diversions or dewatering; (5) because the number of unarmored threespine sticklebacks in a population can be high, many individuals could be affected without a substantial effect on the population; and (6) the take level we anticipate must be consistent with the non-jeopardy determination in that it cannot appreciably reduce the numbers reproduction, or distribution of the species. Based upon the scope of the RMDP project and take anticipated in previous biological opinions from the region (see Appendix A), we have determined that if 10 (ten) unarmored threespine sticklebacks are found dead or injured as a result of construction (including entrainment in pumps; excluding capture, as described below), maintenance, or restoration activities, the actions resulting in take should cease until the Corps reinitiates formal consultation and that process is concluded.

In addition to take we anticipate from construction, maintenance, or restoration activities and entrainment in pumps, the applicant has proposed to capture and relocate unarmored threespine sticklebacks from construction zones and parts of the river that would be de-watered or subject to water diversion. We cannot precisely anticipate how many unarmored threespine sticklebacks would be captured during these activities; however, we are obliged to make a reasonable estimate based upon factors similar to those outlined in the previous paragraph. In contrast, many more unarmored threespine sticklebacks are likely to be captured than would be found dead or injured (in fact, that is the goal of the capture/relocation). Consequently, if 100 unarmored threespine sticklebacks are captured during de-watering/water diversion activities, the Corps must reinitiate formal consultation. Project activities that could result in further take should cease during the reinitiation period because the take exemption would have lapsed when

more than 100 unarmored threespine sticklebacks were captured. (More detail on the reinitiation requirements is provided in the section on Reinitiation, below.)

Coastal California Gnatcatcher

Despite the presence of 4,126 acres of suitable coastal sage scrub habitat that could be occupied by the coastal California gnatcatcher, only one individual coastal California gnatcatcher has been observed within the action area in 15 years of avian surveys. We analyzed the effects of the project on much of this suitable habitat, but based upon the negative surveys results for the species for approximately 15 years, we conclude that only the area where the one bird was observed is occupied. We anticipate that the one (1) coastal California gnatcatcher will be taken as a result of habitat loss for development in the area where it was observed. The bird may be killed or injured outright by the removal of vegetation, or it may be forced from its territory into adjacent habitat that may be less suitable where it would be at risk of predation, starvation, or other injury as described in the Effects Analysis. If other coastal California gnatcatchers are observed during or prior to habitat removal and could be taken, the activities should cease until the Corps reinitiates formal consultation and that process is completed. The take of any other coastal California gnatcatchers in the action area is not anticipated nor exempted from the section 9 prohibitions pursuant to section 7(o)(2).

REASONABLE AND PRUDENT MEASURES

As discussed in the Effects Analysis and shown in Appendix B, the Corps and Newhall have proposed numerous measures to minimize the incidental take of listed species (see Appendix B); however; the Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of incidental take anticipated by this biological opinion:

1. The Corps must require Newhall to minimize the impact of indirect effects on the least Bell's vireo by implementing measures to address noise.

2. The applicant will incorporate measures into its development plans to minimize potential for habituation behaviors by California condors.

3. The Corps must require Newhall to employ only qualified biologists to capture and relocate any unarmored threespine sticklebacks at risk of desiccation or other injury or mortality during construction, maintenance, or restoration activities.

4. The Corps must require Newhall to screen any pumps used in de-watering in unarmored threespine stickleback habitat to prevent entrainment.

5. Measures must be implemented during construction in suitable coastal California gnatcatcher to minimize the impact of the habitat loss that will occur.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher that were developed by the Corps and Newhall and are discussed in the RMDP biological assessment in Appendix B, which are incorporated here by reference (URS 2010). Any subsequent changes in these measures proposed by the Corps and Newhall may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that are proposed by the Corps and Newhall as part of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps and Newhall must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

The following term and condition implements reasonable and prudent measure 1:

1.1 Newhall or its contractors must employ any practicable methods to minimize noise impacts to least Bell's vireo habitat during construction, including temporary soundwalls, use of quieter equipment, or vegetation screening. For long-term noise impacts, Newhall must incorporate vegetation screening where possible to reduce traffic noise into least Bell's vireo habitat, using only plant species native to the action area.

The following terms and conditions implement reasonable and prudent measure 2:

2.1 The applicant must produce educational materials to be included in Homeowner's Associations (HOA) notifications to prospective homeowners, that provides information on the identification and protection of California condors. The information on California condors included in HOA publications must be approved by the Service prior to human occupancy of any project development.

2.2 The applicant must ensure that HOA materials provided under 2.1 include mandatory reporting by residents of any California condors seen on or near developed areas, including any condor seen perching on structures, drinking from standing water (e.g., swimming pools), or feeding on carcasses within an estimated 1,000 feet of development. .

2.3 If any California condor is observed on or near (perched or on the ground within est. 1,000 feet) developed areas, the applicant or HOA must notify the Service immediately. The applicant or HOA must call the Hopper Mountain National Wildlife Refuge office (phone: (805) 644-5185) and the Ventura Fish and Wildlife Office (phone: (805) 644-1766) to report the incident.

The Service will likely be concurrently monitoring the movements of any California condor that moves toward the RMDP area (using GPS units or telemetry). If the Service has data to indicate that any California condor is on the vicinity of the RMDP area, the Service shall be allowed access to the project to make visual observations of the bird(s).

2.4 If any California condor is on or near developed areas, as described above, the HOA or applicant must allow the Service access to attempt to haze the bird away from the area. Hazing may include running dogs in the area, spraying the condor with water, noise-making devices, and other deterrents. Residents and people other than Service personnel are not authorized to haze the condors; such hazing could constitute take by harassment which is not exempted from the take prohibitions of section 9 by this biological opinion.

The Service shall be allowed to attempt hazing as often and repeatedly as it deems necessary to prevent habituation or other injury to a condor.

2.5 If attempts at hazing are unsuccessful, the Service will notify the HOA and/or applicant that capture of the California condor is required. Upon notification that capture is required, the HOA or applicant must allow the Service access to an appropriate area (as determined by the Service) to capture the California condor for relocation or removal to captivity. Any California condor that must be captured will be considered taken.

The following terms and conditions implement reasonable and prudent measure 3:

3.1 At least 30 days prior to the onset of any activity, Newhall must submit for Service approval the names and qualifications of any individuals it wishes to conduct capture and relocation of unarmored threespine sticklebacks. While individuals possessing recovery permits issued pursuant to section 10(a)(1)(A) of the Act may be qualified to conduct these activities, that permit does not authorize the activities covered in this biological opinion. The authorization of such take must be made under the auspices of this biological opinion, and such authorization is valid only for the RMDP project.

3.2 Prior to any work, the authorized biologist must locate a suitable relocation spot for any unarmored threespine sticklebacks captured. A suitable relocation spot should be within 500 feet of the point of capture, contain water of adequate depth and flow rate (similar to the point of capture), and have a suitable substrate (similar to the point of capture).

3.3 Any unarmored threespine sticklebacks captured must be held for as short a time as possible using clean buckets free of lotions, soaps, or other chemicals.

The following terms and conditions implement reasonable and prudent measure 4:

4.1 Intakes of any pumps used for dewatering or diversions must be completely screened with wire mesh with openings no larger than 0.25 inches.

4.2 Upon completion of activities that required dewatering or diversion, the flow that existed prior to the dewatering/diversion must be restored.

The following terms and conditions implement reasonable and prudent measure 5:

5.1 A qualified biologist must survey and monitor the coastal California gnatcatcher habitat to determine if the species is present, and if so, whether it is actively nesting. The qualifications of the biologist will be submitted to the Service for our approval at least 15 days prior to the onset of activities that would require the biologist to survey and monitor for coastal California gnatcatchers.

5.2 Surveys must be conducted by the authorized biologist(s) walking through suitable habitat areas, within the limits described below, while watching and listening for coastal California gnatcatchers. If necessary, the authorized biologist(s) may use playback of recorded coastal California gnatcatcher calls to elicit a response, as described in the Service's coastal California gnatcatcher survey protocol.

5.3 Monitoring of coastal California gnatcatchers must be conducted by the authorized biologist(s) during the construction period. This period must include initial grading, excavation and fill, and contouring of the pads and roadways. Surveys must be conducted at least twice per week, separated by at least one day, between 6:00 am and 10:00 am. The optimum survey time would be before daily construction activities begin, although the Service recognizes that this may not always be possible. All survey dates and times must be logged and reported to the Service at the end of the project.

5.4 If grading occurs during the peak of the coastal California gnatcatcher nesting season (mid-March through mid-May), the applicant must not remove vegetation within 400 feet of any active coastal California gnatcatcher nest. The 400-foot distance is the radius necessary to protect a circular area of 12 acres (the minimum size of one coastal California gnatcatcher territory; habitat connection between the nest site and adjacent dedicated open space must be maintained until nesting is completed). The authorized biologist must have the authority to halt activities that he/she determines may affect any nesting coastal California gnatcatchers detected within the limits described above.

5.5 Monitoring for nesting coastal California gnatcatchers during activities following initial vegetation grubbing must extend 200 feet into adjacent coastal sage scrub habitat, beyond the marked grading limits. The Service assumes that 200 feet off-site will satisfy the 400-foot buffer intended to protect nesting coastal California gnatcatchers. Regardless of whether nesting coastal California gnatcatchers are found on the site or within the 200-foot off-site buffer, no vegetation removal or construction must proceed within 400 feet of any coastal California gnatcatcher nest location. The authorized biologist must have the authority to halt activities that he/she determines may affect any nesting coastal California gnatcatchers detected within the limits described above.

5.6 If the Service-approved biologist(s) halts any action that may result in impacts that exceed the levels anticipated by the Corps and the Service during review of the proposed action, the Corps and the Service must be notified immediately by the biological monitor. The monitor must keep a log of survey dates, times, and observations to be submitted to the Service at the end of the project.

5.7 The number of access routes, number and size of staging areas, and the total area of the activities within suitable coastal California gnatcatcher habitat must be limited to the minimum necessary to achieve the project goal. Routes and boundaries must be clearly demarcated and these areas must be outside of coastal sage scrub habitat unless included in the original plans. Areas disturbed for access and staging must be restored.

5.8 Measures to prevent unauthorized off-road vehicles from accessing adjacent areas from the project site must be implemented, including barriers (*e.g.*, boulders, fencing) or security patrols.

REPORTING REQUIREMENTS

The Corps or Newhall must provide a written report to the Service on an annual basis for the duration of the project plus a final report once the project has been completed. The reports must document the age class (if possible) and number of arroyo toads, and unarmored threespine stickleback relocated from the action area, the date and time of relocation, and a description of relocation sites. The report must also state the number of least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher killed or injured, and describe the circumstances of the injuries or mortalities if known. The report must contain a brief discussion of any problems encountered in implementing minimization measures, results of biological surveys and sighting records, and any other pertinent information. We encourage you to submit recommendations regarding modification or addition of measures that would maintain or improve protection of least Bell's vireo, southwestern willow flycatcher, California condor, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher, while simplifying compliance with the Act.

DISPOSITION OF INJURED OR DEAD SPECIMENS

Within 3 days of locating any dead or injured listed animals, the Corps or Newhall must notify the Ventura Fish and Wildlife Office by telephone ((805) 644-1766) and in writing. The report must include the date, time, location of the carcass, a photograph, cause of death, if known, and any other pertinent information. Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured animals survive, either the Corps or Newhall must contact the Service regarding their final disposition.

The remains of any least Bell's vireos, southwestern willow flycatchers, California condors, arroyo toads, unarmored threespine sticklebacks, and coastal California gnatcatcher, must be

placed with the Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, California, 93010 (Attention: Chris Dellith; (805) 644-1766, extension 227).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that any non-native predators of least Bell's vireo, southwestern willow flycatcher, arroyo toad, unarmored threespine stickleback, and coastal California gnatcatcher, be permanently removed from the wild if they can be captured while monitoring project activities. Anyone conducting such removals should be in compliance with the California Fish and Game Code.

2. We recommend that Newhall conduct annual breeding season surveys within the Santa Clara River watershed for least Bell's vireos and southwestern willow flycatchers, and report the results of these surveys to the Service. This will improve our knowledge of the distribution of these species and assist us in making future conservation decisions regarding these species and their habitat.

3. We recommend that Newhall pursue additional vegetation enhancement, exotic plant removal, and African clawed frog control opportunities in the Santa Clara River corridor to further the recovery of the unarmored threespine stickleback, and arroyo toad.

4. We recommend that Newhall relocate other native amphibians and reptiles that could be harmed by project activities from the project area to suitable habitat outside the project area prior to and during project activities.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the Corps' proposed authorization of activities associated with the Newhall Ranch Specific Plan. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat

not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) will have lapsed and any further take would be a violation of section 4(d) or 9. Consequently, operations causing such take should cease pending reinitiation.

If you have any questions regarding this consultation, please contact Chris Dellith of my staff at (805) 644-1766, extension 227.

Sincerely,

/s/: Diane K. Noda

Diane K. Noda
Field Supervisor

cc:
Helen Birss, California Department of Fish and Game

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PERSONAL COMMUNICATION AND OBSERVATIONS

Lenny Malo, Los Angeles Basin, Natural Resources Division Manager, URS Corporation, email correspondence, September 30, 2009.

Matt Carpenter, Environmental Resources Director, Newhall Land and Farming, telephone conversation, August 26, 2010.

Chris Dellith, Senior Biologist, U.S. Fish and Wildlife Service, personal observation, August 26, 2009.

Rhys Evans, Natural Resource Manager, Vandenberg Air Force Base, email correspondence, 2008

Appendix A. Past Consultations in the Vicinity of the Action Area

Project Name	Date	Biological Opinion Number	Species Covered[1]	Take (Anticipated)	Critical Habitat[1] (Acres Permanently Disturbed)
Temporary Diversion Berm on the Santa Clara River, Newhall Ranch	October 26, 1993	1-8-94-F-1	UTS	5	NA
Southern Pacific Milling Company Sand and Gravel Mine	February 7, 1994	1-8-93-F-29	LBV	1	NA
Installation of a Southern California Gas Company Pipeline	August 28, 1995	1-8-95-F-34	UTS	10	NA
Installation of Irrigation Pipelines on the Santa Clara River, Newhall Ranch	October 23, 1995	1-8-95-F-47	UTS	10	NA
Construction of Erosion Control Facilities for the Valencia Water Reclamation Plant	February 29, 1996	1-8-96-FC-18	LBV UTS	0 10	0 NA
Repair of I-5 Bridge over the Santa Clara River	September 6, 1996	1-8-96-F-39	LBV	1	NA
Widening of State Route 126	April 20, 1997	1-8-97-F-44	LBV	1	0.5
Newhall Land and Farming's Summer Crossings and Water Diversion	September 25, 1998	1-8-98-FW-68	UTS	10	NA
Sewer Line and Force Main	September 28, 1998	1-8-98-F-67	LBV	10	NA

Project Name	Date	Biological Opinion Number	Species Covered[1]	Take (Anticipated)	Critical Habitat[1] (Acres Permanently Disturbed)
Natural River Management Plan	November 27, 1998	1-8-98-FC-61	LBV SWIFL UTS	UTD[2] UTD 10	11 NA NA
Replacement of I-5 Bridge over the Santa Clara River	December 26, 2000	1-8-00-F-68	LBV SWIFL UTS	2 2 1	1.18 NA NA
Replacement of Highway 101 Bridge over the Santa Clara River, Ventura County	May 3, 2001	1-8-01-F-4	LBV SWIFL	2 1	NA NA
Plum Canyon Phase 1C Residential Development, Santa Clarita, Los Angeles County	June 27, 2001	1-8-01-F-30	CAGN	0	90[3]
Amendment to the Biological Opinion for the Santa Clara River Bridge Replacement Project	April 3, 2002	1-8-01-F-4	LBV SWIFL	0 0	NA NA
Natural River Management Plan (Supplement to previous application dated November 27, 1998)	November 15, 2002	1-8-02-F-4R	ARTO	1	NA
Castaic Creek Bank Protection, Valencia Commerce Center, Los Angeles County	December 17, 2002	1-8-02-F-43	ARTO UTS	1 1	NA NA

Project Name	Date	Biological Opinion Number	Species Covered[1]	Take (Anticipated)	Critical Habitat[1] (Acres Permanently Disturbed)
Restoration of Hart Baseball Field along the Santa Clara River, Los Angeles County	February 20, 2003	1-8-02-F-54	ARTO UTS	1 1	NA NA
Plum Canyon Residential Development, Los Angeles County	March 25, 2003	1-8-02-F-63	CAGN	0	206[3]
Sand Canyon Residential Development, Santa Clarita, Los Angeles County	June 30, 2003	1-8-02-F-65	CAGN	0	39.6[3]
Re-initiation of the Replacement of the I-5 Bridge over the Santa Clara River	August 1, 2003	1-8-03-F-22R	LBV SWIFL ARTO UTS	2 2 6 3	1.18 NA NA NA
Santa Clara River Reaches 71 and 82	October 24, 2004	1-8-04-F-4	ARTO UTS	1 1	NA NA
Townhomes at the River Development and Construction of a Flood Control Levee	March 31, 2005	1-8-04-F-39	LBV	4	NA
I-5 Hasley Canyon Interchange Improvement	May 31, 2005	1-8-05-F-16	ARTO UTS	1 1	NA NA
Plum Canyon Phase 1D Residential Development, Santa Clarita, Los Angeles County	June 16, 2005	1-8-04-F-51	CAGN	2	53[3]
Northlake Residential Development Project, Santa Clarita, Los Angeles County	June 21, 2005	1-8-04-F-57	LBV SWIFL	4 4	NA NA

Project Name	Date	Biological Opinion Number	Species Covered[1]	Take (Anticipated)	Critical Habitat[1] (Acres Permanently Disturbed)
Amendment to Biological Opinion for Santa Clara River Bridge Replacement	February 16, 2006	1-8-01-F-04	LBV SWIFL	0 0	1.18 NA
Santa Paula Water Recycling Facility	September 5, 2006	1-8-06-F-34	LBV	12	NA
Robin's Nest Recreational Vehicle Park	September 28, 2006	1-8-06-F-27	UTS	5	NA

[1] Notes: Least Bell's Vireo (LBV), Southwestern Willow Flycatcher (SWIFL), Arroyo Toad (AT), Unarmored Threespine Stickleback (UTS), Coastal California Gnatcatcher (CAGN), Not Applicable (NA)
[2] UTD = Unable to determine; the biological opinion does not specify the level of take anticipated.
[3] The affected critical habitat unit for the coastal California gnatcatcher was removed from the revised designation.

Appendix B: Mitigation Measures Proposed Newhall Land and Farming

In June 2010, the U.S. Army Corps of Engineers (Corps) and the California Department of Fish and Game (CDFG) released a Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed Newhall Ranch Development project. The EIS/EIR provides mitigation measures that would reduce the project's impacts on biological resources, including 80 measures previously adopted by the County of Los Angeles during the Specific Plan approval process and 89 measures added by the Corps and CDFG. Measures identified in the Newhall Ranch Specific Plan Program EIR for biological resources that minimize effects to federally listed wildlife species within the action area are included below from subsection B-1. Additional measures identified in the EIR/EIS for biological resources that minimize effects to federally listed wildlife species within the action area are included below in subsection B-2. These additional measures are consistent with and supplement those mitigation measures listed in the previously certified Newhall Ranch Specific Plan Program EIR.

B.1 MITIGATION MEASURES ALREADY REQUIRED BY THE ADOPTED SPECIFIC PLAN

SP-4.6-1 The restoration mitigation areas located within the River Corridor SMA shall be in areas that have been disturbed by previous uses or activities. Mitigation shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority will be given to those restorable areas that occur adjacent to existing patches (areas) of native habitat that support sensitive species, particularly Endangered or Threatened species. The goal is to increase habitat patch size and connectivity with other existing habitat patches while restoring habitat values that will benefit sensitive species.

SP-4.6-2 A qualified biologist shall prepare or review revegetation plans. The biologist shall also monitor the restoration effort from its inception through the establishment phase.

SP-4.6-3 Revegetation Plans may be prepared as part of a CDFG 1603 Streambed Alteration Agreement and/or a Corps Section 404 Permit, and shall include:

- Input from both the Project proponent and resource agencies to assure that the Project objectives applicable to the River Corridor SMA and the criteria of this RMDP are met.
- The identification of restoration/mitigation sites to be used. This effort shall involve an analysis of the suitability of potential sites to support the desired habitat, including a description of the existing conditions at the site(s) and such base line data information deemed necessary by the permitting agency.

SP-4.6-4 The revegetation effort shall involve an analysis of the site conditions such as soils and hydrology so that site preparation needs can be evaluated. The revegetation plan shall include the details and procedures required to prepare the restoration site for planting (i.e., grading, soil preparation, soil stockpiling, soil amendments, etc.), including the need for a supplemental irrigation system, if any.

SP-4.6-5 Restoration of riparian habitats within the River Corridor SMA shall use plant species native to the Santa Clara River. Cuttings or seeds of native plants shall be gathered within the River Corridor SMA or purchased from nurseries with local supplies to provide good genetic stock for the replacement habitats. Plant species used in the restoration of riparian habitat shall be listed on the approved project plant palette (Specific Plan Table 2.6-1, Recommended Plant Species for Habitat Restoration in the River Corridor SMA) or as approved by the permitting State and Federal agencies.

SP-4.6-6 The final revegetation plans shall include notes that outline the methods and procedures for the installation of the plant materials. Plant protection measures identified by the project biologist shall be incorporated into the planting design/layout.

SP-4.6-7 The revegetation plan shall include guidelines for the maintenance of the mitigation site during the establishment phase of the plantings. The maintenance program shall contain guidelines for the control of non-native plant species, the maintenance of the irrigation system, and the replacement of plant species.

SP-4.6-8 The revegetation plan shall provide for monitoring to evaluate the growth of the developing habitat. Specific performance goals for the restored habitat shall be defined by qualitative and quantitative characteristics of similar habitats on the River (e.g., density, cover, species composition, structural development). The monitoring effort shall include an evaluation of not only the plant material installed, but the use of the site by wildlife. The length of the monitoring period shall be determined by the permitting state and/or federal agency.

SP-4.6-9 Monitoring reports for the mitigation site shall be reviewed by the permitting State and/or Federal agency.

SP-4.6-10 Contingency plans and appropriate remedial measures shall also be outlined in the revegetation plan.

SP-4.6-11 Habitat enhancement as referred to in this document means the rehabilitation of areas of native habitat that have been moderately disturbed by past activities (e.g., grazing, roads, oil and natural gas operations, etc.) or have been invaded by non-native plant species such as giant cane (*Arundo donax*) and tamarisk (*Tamarix* sp.).

SP-4.6-12 Removal of grazing is an important means of enhancement of habitat values. Without ongoing disturbance from cattle, many riparian areas will recover naturally. Grazing except as permitted as a long-term resource management activity will be removed from the River Corridor SMA pursuant to the Long-Term Management Plan set forth in Section 4.6 of the Specific Plan EIR.

SP-4.6-13 To provide guidelines for the installation of supplemental plantings of native species within enhancement areas, a revegetation plan shall be prepared prior to implementation of mitigation (see guidelines for revegetation plans above). These supplemental plantings will be composed of plant species similar to those growing in the existing habitat patch (see Specific Plan Table 2.6-1).

SP-4.6-14 Not all enhancement areas will necessarily require supplemental plantings of native species. Some areas may support conditions conducive for rapid "natural" reestablishment of native species. The revegetation plan may incorporate means of enhancement to areas of compacted soils, poor soil fertility, trash or flood debris, and roads as a way of enhancing riparian habitat values.

SP-4.6-15 Removal of non-native species such as giant cane (*Arundo donax*), salt cedar or tamarisk (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), castor bean (*Ricans communis*), if included in a revegetation plan to mitigate impacts, shall be subject to the following standards:

- First priority shall be given to those habitat patches that support or have a high potential for supporting sensitive species, particularly Endangered or Threatened species.
- All non-native species removals shall be conducted according to a resource agency approved exotics removal program.
- Removal of non-native species in patches of native habitat shall be conducted in such a way as to minimize impacts to the existing native riparian plant species.

SP-4.6-16 Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources shall be conducted pursuant to the Oak Resources Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.

SP-4.6-17 Access to the River Corridor SMA for hiking and biking shall be limited to the River trail system (including the Regional River Trail and various Local Trails) as set forth in this Specific Plan.

- The River trail system shall be designed to avoid impacts to existing native riparian habitat, especially habitat areas known to support sensitive species. Where impacts to riparian habitat are unavoidable, disturbance shall be minimized and mitigated as outlined above under Mitigation Measures 4.6-1 through 4.6-8.

- Access to the River Corridor SMA will be limited to day time use of the designated trail system.
- Signs indicating that no pets of any kind will be allowed within the River Corridor SMA, with the exception that equestrian use is permitted on established trails, shall be posted along the River Corridor SMA.
- No hunting, fishing, or motor or off-trail bike riding shall be permitted.
- The trail system shall be designed and constructed to minimize impacts on native habitats.

SP-4.6-18 Where development lies adjacent to the boundary of the River Corridor SMA a transition area shall be designed to lessen the impact of the development on the conserved area. Transition areas may be comprised of Open Area, natural or revegetated manufactured slopes, other planted areas, bank areas, and trails. Exhibits 2.6-4, 2.6-5, and 2.6-6 indicate the relationship between the River Corridor SMA and the development (disturbed) areas of the Specific Plan. The SMAs and the Open Area as well as the undisturbed portions of the development areas are shown in green. As indicated on the exhibits, on the south side of the river the River Corridor SMA is separated from development by the river bluffs, except in one location. The Regional River Trail will serve as transition area on the north side of the river where development areas adjoin the River Corridor SMA (excluding Travel Village).

SP-4.6-19 The following are the standards for design of transition areas:

- In all locations where there is no steep grade separation between the River Corridor SMA and development, a trail shall be provided along this edge.
- Native riparian plants shall be incorporated into the landscaping of the transition areas between the River Corridor SMA and adjacent development areas where feasible for their long-term survival. Plants used in these areas shall be those listed on the approved plant palette (Specific Plan Table 2.6-2 of the Resource Management Plan [Recommended Plants for Transition Areas Adjacent to the River Corridor SMA]).
- Roads and bridges that cross the River Corridor SMA shall have adequate barriers at their perimeters to discourage access to the River Corridor SMA adjacent to the structures.
- Where bank stabilization is required to protect development areas, it shall be composed of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other locations where public health and safety requirements necessitate concrete or other bank protection.
- A minimum 100-foot-wide buffer adjacent to the Santa Clara River should be required between the top river side of bank stabilization and development within the Land Use Designations Residential Low Medium, Residential Medium, Mixed-Use and Business Park unless, through Planning Director review in consultation with the staff biologist, it is determined that a lesser buffer would adequately protect the riparian resources within the River Corridor, or that a

100-foot-wide buffer is infeasible for physical infrastructure planning. The buffer area may be used for public infrastructure, such as: flood control access; sewer, water and utility easements; abutments; trails and parks, subject to findings of consistency with the Specific Plan and applicable County policies.

SP-4.6-20 The following guidelines shall be followed during any grading activities that take place within the River Corridor SMA:

- Grading perimeters shall be clearly marked and inspected by the project biologist prior to grading occurring within or immediately adjacent to the River Corridor SMA.
- The project biologist shall work with the grading contractor to avoid inadvertent impacts to riparian resources.

SP-4.6-21 Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the River Corridor SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3 of the Specific Plan.

SP-4.6-22 Upon completion of development of all land uses, utilities, roads, flood control improvements, bridges, trails, and other improvements necessary for implementation of the Specific Plan within the River Corridor in each subdivision allowing construction within or adjacent to the River Corridor, a permanent, non-revocable *conservation and public access easement* shall be offered to the County of Los Angeles pursuant to Mitigation Measure 4.6-23, below, over the portion of the River Corridor SMA within that subdivision.

SP-4.6-23 The River Corridor SMA *Conservation and Public Access Easement* shall be offered to the County of Los Angeles prior to the transfer of the River Corridor SMA ownership, or portion thereof to the management entity described in Mitigation Measure 4.6-26, below.

SP-4.6-24 The River Corridor SMA *Conservation and Public Access Easement* shall prohibit grazing, except as a long-term resource management activity, and agriculture within the River Corridor and shall restrict recreation use to the established trail system.

Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended in the event of the filing of any legal action against Los Angeles County challenging final approval of the Newhall Ranch Specific Plan and any related project approvals or certification of the Final EIR for Newhall Ranch. Agricultural land uses and grazing for purposes other than long-term resource management activities within the River Corridor shall be extended by the time period between the filing of any such legal action and the entry of a final judgment by a court with appropriate jurisdiction, after exhausting all

rights of appeal, or execution of a final settlement agreement between all parties to the legal action, whichever occurs first.

SP-4.6-25 The River Corridor SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-26 Prior to the recordation of the River Corridor SMA *Conservation and Public Access Easement* as specified in Mitigation Measure 4.6-23, above, the land owner shall provide a plan to the County for the permanent ownership and management of the River Corridor SMA, including any necessary financing. This plan shall include the transfer of ownership of the River Corridor SMA to the Center for Natural Lands Management, or if the Center for Natural Lands Management is declared bankrupt or dissolved, ownership will transfer or revert to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members).

SP-4.6-26a Two types of habitat restoration may occur in the High Country SMA: 1) riparian revegetation activities principally in Salt Creek Canyon; and 2) oak tree replacement in, or adjacent to, existing oak woodlands and savannahs.

- Mitigation requirements for riparian revegetation activities within the High Country SMA are the same as those for the River Corridor SMA and are set forth in Mitigation Measures 4.6-1 through 4.6-11 and 4.6-13 through 4.6-16, above.
- Mitigation requirements for oak tree replacement are set forth in Mitigation Measure 4.6-48, below.

SP-4.6-27 Removal of grazing from the High Country SMA except for those grazing activities associated with long-term resource management programs, is a principal means of enhancing habitat values in the creeks, brushland and woodland areas of the SMA. The removal of grazing in the High Country SMA is discussed below under (b) 4. Long Term Management. All enhancement activities for riparian habitat within the High Country SMA shall be governed by the same provisions as set forth for enhancement in the River Corridor SMA. Specific Plan Table 2.6-3 of the Resource Management Plan provides a list of appropriate plant species for use in enhancement areas in the High Country SMA.

SP-4.6-28 Mitigation banking activities for riparian habitats will be subject to State and Federal regulations and permits. Mitigation banking for oak resources, shall be conducted pursuant to the Oak Resource Replacement Program. Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester.

SP-4.6-29 Access to the High Country SMA will be limited to day time use of the designated trail system.

SP-4.6-30 No pets of any kind will be allowed within the High Country SMA, with the exception that equestrian use is permitted on established trails.

SP-4.6-31 No hunting, fishing, or motor or trail bike riding shall be permitted.

SP-4.6-32 The trail system shall be designed and constructed to minimize impacts on native habitats.

SP-4.6-33 Construction of buildings and other structures (such as patios, decks, etc.) shall only be permitted upon developed pads within Planning Areas OV-04, OV-10, PV-02, and PV-28 and shall not be permitted on southerly slopes facing the High Country SMA (Planning Area HC-01) or in the area between the original SEA 20 boundary and the High Country boundary. If disturbed by grading, all southerly facing slopes which adjoin the High Country SMA within those Planning Areas shall have the disturbed areas revegetated with compatible trees, shrubs and herbs from the list of plant species for south and west facing slopes as shown in Table 2.6-3, Recommended Plant Species For Use In Enhancement Areas In The High Country.

Transition from the development edge to the natural area shall also be controlled by the standards of wildfire fuel modification zones as set forth in Mitigation Measure 4.6-49. Within fuel modification areas, trees and herbs from Table 2.6-3 of the Resource Management Plan should be planted toward the top of slopes; and trees at lesser densities and shrubs planted on lower slopes.

SP-4.6-34 Grading perimeters shall be clearly marked and inspected by the project biologist prior to impacts occurring within or adjacent to the High Country SMA.

SP-4.6-35 The project biologist shall work with the grading contractor to avoid inadvertent impacts to biological resources outside of the grading area.

SP-4.6-36 Upon final approval of the Newhall Ranch Specific Plan, the Special Management Area designation for the High Country SMA shall become effective. The permitted uses and development standards for the SMA are governed by the Development Regulations, Chapter 3.

SP-4.6-37 The High Country SMA shall be offered for dedication in three approximately equal phases of approximately 1,400 acres each proceeding from north to south, as follows:

1. The first offer of dedication will take place with the issuance of the 2,000th residential building permit of Newhall Ranch;

2. The second offer of dedication will take place with the issuance of the 6,000th residential building permit of Newhall Ranch; and
3. The remaining offer of dedication will be completed by the 11,000th residential building permit of Newhall Ranch.

The Specific Plan applicant shall provide a quarterly report to the Departments of Public Works and Regional Planning which indicates the number of residential building permits issued in the Specific Plan area by subdivision map number.

SP-4.6-38 Prior to dedication of the High Country SMA, a *conservation and public access easement* shall be offered to the County of Los Angeles and a conservation and management easement offered to the Center for Natural Lands Management. The High Country SMA *Conservation and Public Access Easement* shall be consistent in its provisions with any other *conservation easement*s to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-39 The High Country SMA conservation and public access easement shall prohibit grazing within the High Country, except for those grazing activities associated with the long-term resource management programs, and shall restrict recreation to the established trail system.

SP-4.6-40 The High Country SMA conservation and public access easement shall be consistent in its provisions with any other conservation easements to State or Federal resource agencies which may have been granted as part of mitigation or mitigation banking activities.

SP-4.6-41 The High Country SMA shall be offered for dedication in fee to a *joint powers authority* consisting of Los Angeles County (4 members), the City of Santa Clarita (2 members), and the Santa Monica Mountains Conservancy (2 members). The *joint powers authority* will have overall responsibility for recreation within and conservation of the High Country.

SP-4.6-42 An appropriate type of service or assessment district shall be formed under the authority of the Los Angeles County Board of Supervisors for the collection of up to $24 per single family detached dwelling unit per year and $15 per single family attached dwelling unit per year, excluding any units designated as Low and Very Low affordable housing units pursuant to Section 3.10, Affordable Housing Program of the Specific Plan. This revenue would be assessed to the homeowner beginning with the occupancy of each dwelling unit and distributed to the *joint powers authority* for the purposes of recreation, maintenance, construction, conservation and related activities within the *High Country Special Management Area*.

SP-4.6-43 Suitable portions of *Open Area* may be used for mitigation of riparian, *oak resources*, or elderberry scrub. Mitigation activities within *Open Area* shall be subject to the following requirements, as applicable:

- River Corridor SMA Mitigation Requirements, including: Mitigation Measures 4.6-1 through 4.6-11 and 4.6-13 through 4.6-16
- High Country SMA Mitigation Requirements, including: Mitigation Measures 4.6-27, 4.6-29 through 4.6-42
- Mitigation Banking: Mitigation Measure 4.6-16

SP-4.6-44 Drainages with flows greater than 2,000 cfs will have soft bottoms. Bank protection will be of ungrouted rock, or buried bank stabilization as described in Section 2.5.2.a, except at bridge crossings and other areas where public health and safety considerations require concrete or other stabilization.

SP-4.6-45 The precise alignments and widths of major drainages will be established through the preparation of drainage studies to be approved by the County at the time of subdivision maps which permit construction.

SP-4.6-46 While Open Area is generally intended to remain in a natural state, some grading may take place, especially for parks, major drainages, trails, and roadways. Trails are also planned to be within Open Area.

SP-4.6-47 At the time that final subdivision maps permitting construction are recorded, the *Open Area* within the map will be offered for dedication to the Center for Natural Lands Management. Community Parks within *Open Area* are intended to be public parks. Prior to the offer of dedication of *Open Area* to the Center for Natural Lands Management, all necessary *conservation and public access easements*, as well as easements for infrastructure shall be offered to the County.

SP-4.6-47a Mitigation Banking will be permitted within the River Corridor SMA, the High Country SMA, and the *Open Area land use designations*, subject to the following requirements:

- Mitigation banking activities for riparian habitats will be subject to State and Federal regulations, and shall be conducted pursuant to the mitigation requirements set forth in Mitigation Measure 4.6-1 through 4.6-15 above.
- Mitigation banking for oak resources shall be conducted pursuant to 4.6-48, below.
- Mitigation banking for elderberry scrub shall be subject to approval of plans by the County Forester

SP-4.6-48 Standards for the restoration and enhancement of oak resources within the High Country SMA and the Open Area include the following (oak resources include oak trees of the sizes regulated under the County Oak Tree Ordinance, southern California black walnut trees, Mainland cherry trees, and Mainland cherry shrubs):

- To mitigate the impacts to oak resources that may be removed as development occurs in the Specific Plan Area, replacement trees shall be planted in conformance with the oak tree ordinance in effect at that time.
- Oak resource species obtained from the local gene pool shall be used in restoration or enhancement.
- Prior to recordation of construction-level final subdivision maps, an oak resource replacement plan shall be prepared that provides the guidelines for the oak tree planting and/or replanting. The Plan shall be reviewed by the Los Angeles Department of Regional Planning and the County Forester and shall include the following: site selection and preparation, selection of proper species including sizes and planting densities, protection from herbivores, site maintenance, performance standards, remedial actions, and a monitoring program.
- All plans and specifications shall follow County oak tree guidelines, as specified in the County Oak Tree Ordinance.

SP-4.6-49 To minimize the potential exposure of the development areas, Open Area, and the SMAs to fire hazards, the Specific Plan is subject to the requirements of the Los Angeles County Fire Protection District (LACFPD), which provides fire protection for the area. At the time of final subdivision maps permitting construction in development areas that are adjacent to Open Area and the High Country SMA, a wildfire fuel modification plan shall be prepared in accordance with the fuel modification ordinance standards in effect at that time and shall be submitted for approval to the County Fire Department.

SP-4.6-50 The wildfire fuel modification plan shall depict a fuel modification zone the size of which shall be consistent with the County fuel modification ordinance requirements. Within the zone, tree pruning, removal of dead plant material and weed and grass cutting shall take place as required by the fuel modification ordinance.

SP-4.6-51 In order to enhance the habitat value of plant communities that require fuel modification, fire retardant plant species containing habitat value may be planted within the fuel modification zone. Typical plant species suitable for Fuel Modification Zones are indicated in Specific Plan Table 2.6-5 of the Resource Management Plan. Fuel modification zones adjacent to SMAs and Open Areas containing habitat of high value such as oak woodland and savannas shall utilize a more restrictive plant list, which shall be reviewed by the County Forester.

SP-4.6-52 The wildfire fuel modification plan shall include the following construction period requirements: a) a fire watch during welding operations; b) spark arresters on all equipment or vehicles operating in a high fire hazard area; c) designated smoking and non-smoking areas; and d) water availability pursuant to the County Fire Department requirements.

SP-4.6-53 If, at the time any subdivision map proposing construction is submitted, the County determines through an Initial Study, or otherwise, that there may be Rare, Threatened or Endangered, plant or animal species on the property to be subdivided, then, in addition to the prior surveys conducted on the Specific Plan site to define the presence or absence of sensitive habitat and associated species, current, updated site-specific surveys for all such animal or plant species shall be conducted in accordance with the consultation requirements set forth in Mitigation Measure 4.6-59 within those areas of the Specific Plan where such animal or plant species occur or are likely to occur.

The site-specific surveys shall include the unarmored three-spine stickleback, the arroyo toad, the Southwestern pond turtle, the California red-legged frog, the southwestern willow flycatcher, the least Bell's vireo, the San Fernando Valley spineflower and any other Rare, Sensitive, Threatened, or Endangered plant or animal species occurring, or likely to occur, on the property to be subdivided. All site-specific surveys shall be conducted during appropriate seasons by qualified botanists or qualified wildlife biologists in a manner that will locate any Rare, Sensitive, Threatened, or Endangered animal or plant species that may be present. To the extent there are applicable protocols published by either the U.S. Fish and Wildlife Service (Service) or the CDFG, all such protocols shall be followed in preparing the updated site-specific surveys.

All site-specific survey work shall be documented in a separate report containing at least the following information: a) project description, including a detailed map of the project location and study area; b) a description of the biological setting, including references to the nomenclature used and updated vegetation mapping; c) detailed description of survey methodologies; d) dates of field surveys and total person-hours spent on the field surveys; e) results of field surveys, including detailed maps and location data; f) an assessment of potential impacts; g) discussion of the significance of the Rare, Threatened or Endangered animal or plant populations found in the project area, with consideration given to nearby populations and species distribution; h) mitigation measures, including avoiding impacts altogether, minimizing or reducing impacts, rectifying or reducing impacts through habitat restoration, replacement or enhancement, or compensating for impacts by replacing or providing substitute resources or environments, consistent with CEQA (*CEQA Guidelines* section 15370); i) references cited and persons contacted; and j) other pertinent information, which is designed to disclose impacts and mitigate for such impacts."

SP-4.6-54 Prior to development within or disturbance to occupied unarmored threespine stickleback habitat, a formal consultation with the Service shall occur.

SP-4.6-55 Prior to development or disturbance within wetlands or other sensitive habitats, permits shall be obtained from pertinent Federal and State agencies and the Specific Plan shall conform to the specific provisions of said permits. Performance criteria shall include that described in Mitigation Measures 4.6-1 through 4.6-16 and 4.6-42 through 4.6-47 for wetlands, and Mitigation Measures 4.6-27, 4.6-28, and 4.6-42 through 4.6-48 for other sensitive habitats.

SP-4.6-56 All lighting along the perimeter of natural areas shall be downcast luminaries with light patterns directed away from natural areas.

SP-4.6-57 Where bridge construction is proposed and water flow would be diverted, blocking nets and seines shall be used to control and remove fish from the area of activity. All fish captured during this operation would be stored in tubs and returned unharmed back to the river after construction activities were complete.

SP-4.6-58 To limit impacts to water quality the Specific Plan shall conform with all provisions of required NPDES permits and water quality permits that would be required by the State of California Regional Water Quality Control Board.

SP-4.6-59 Consultation shall occur with the County of Los Angeles ("County") and California Department of Fish and Game ("CDFG") at each of the following milestones:

1. Before Surveys. Prior to conducting sensitive plant or animal surveys at the Newhall Ranch subdivision map level, the applicant, or its designee, shall consult with the County and CDFG for purposes of establishing and/or confirming the appropriate survey methodology to be used.
2. After Surveys. After completion of sensitive plant or animal surveys at the subdivision map level, draft survey results shall be made available to the County and CDFG within sixty (60) calendar days after completion of the field survey work.
3. Subdivision Map Submittal. Within thirty (30) calendar days after the applicant, or its designee, submits its application to the County for processing of a subdivision map in the Mesas Village or Riverwood Village, a copy of the submittal shall be provided to CDFG. In addition, the applicant, or its designee, shall schedule a consultation meeting with the County and CDFG for purposes of obtaining comments and input on the proposed subdivision map submittal. The consultation meeting shall take place at least thirty (30) days prior to the submittal of the proposed subdivision map to the County.

4. Development/Disturbance and Further Mitigation. Prior to any development within, or disturbance to, habitat occupied by Rare, Threatened, or Endangered plant or animal species, or to any portion of the Spineflower Mitigation Area Overlay, as defined below, all required permits shall be obtained from both The Service and CDFG, as applicable. It is further anticipated that the federal and state permits will impose conditions and mitigation measures required by federal and state law that are beyond those identified in the Newhall Ranch Final EIR (March 1999), the Newhall Ranch DAA (April 2001) and the Newhall Ranch Revised DAA (2002). It is also anticipated that conditions and mitigation measures required by federal and state law for project-related impacts on Endangered, Rare or Threatened species and their habitat will likely require changes and revisions to Specific Plan development footprints, roadway alignments, and the limits, patterns and techniques associated with project-specific grading at the subdivision map level.

SP-4.6-60 If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may be elderberry scrub vegetation on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.

SP-4.6-61 If at the time subdivisions permitting construction are processed, the County determines through an Initial Study that there may be mainland cherry trees and/or mainland cherry shrubs on the property being subdivided, then a site specific survey shall be conducted to define the presence or absence of such habitat and any necessary mitigation measures shall be determined and applied.

SP-4.6-62 When a map revision or Substantial Conformance determination on any subdivision map or Conditional Use Permit would result in changes to an approved oak tree permit, then the oak tree report for that oak tree permit must be amended for the area of change, and the addendum must be approved by the County Forester prior to issuance of grading permits for the area of the map or CUP being changed.

SP-4.6-63 Riparian resources that are impacted by buildout of the Newhall Ranch Specific Plan shall be restored with similar habitat at the rate of 1 acre replaced for each acre lost.

SP-4.6-64 The operator of the golf course shall prepare a Golf Course Maintenance Plan which shall include procedures to control storm water quality and ground water quality as a result of golf course maintenance practices, including irrigation, fertilizer, pesticide and herbicide use. This Plan shall be prepared in coordination with the County biologist and approved by the County Planning Director prior to the issuance of a Certificate of Occupancy.

B.2 ADDITIONAL MITIGATION MEASURES ADOPTED IN THE EIS/EIR

BIO-1 Mitigation Measures SP-4.6-1 through SP-4.6-16 specify requirements for riparian mitigation conducted in the High Country SMA, Salt Creek area, and Open Area. The RMDP includes requirements for mitigation of both riparian and upland habitats (such as riparian adjacent big sagebrush scrub), and incorporates these Mitigation Measures (SP-4.6-1 through SP-4.6-16). A Comprehensive Mitigation Implementation Plan (CMIP) has been developed by Newhall Land that provides an outline of mitigation to offset impacts described in the RMDP. The CMIP demonstrates the feasibility of creating the required mitigation acreage from RMDP project impacts (see BIO-2).

Detailed riparian/wetland mitigation plans, in accordance with the CMIP, shall be submitted to, and are subject to the approval of, the Corps and CDFG as part of the sub-notification letters for individual projects. Individual project submittals shall include applicable CMIP elements, complying with the requirements outlined below. The detailed wetlands mitigation plan shall specify, at a minimum, the following: 1) the location of mitigation sites; 2) site preparation, including grading, soils preparation, irrigation installation, 2a) the quantity (seed or nursery stock) and species of plants to be planted (all species to be native to region); 3) detailed procedures for creating additional vegetation communities; 4) methods for the removal of non-native plants; 5) a schedule and action plan to maintain and monitor the enhancement/restoration area; 6) a list of criteria by which to measure success of the mitigation sites (e.g., percent cover and richness of native species, percent survivorship, establishment of self-sustaining native of plantings, maximum allowable percent of non-native species); 7) measures to exclude unauthorized entry into the creation/enhancement areas; and 8) contingency measures in the event that mitigation efforts are not successful. The detailed wetlands mitigation plans shall also classify the biological value (as “high,” “moderate,” or “low”) of the vegetation communities to be disturbed as defined in these conditions, or may be based on an agency-approved method (e.g., Hybrid Assessment of Riparian Communities (HARC)). The biological value shall be used to determine mitigation replacement ratios required under BIO-2 and BIO-10. The detailed wetlands mitigation plans shall provide for the 3:1 replacement of any southern California black walnut to be removed from the riparian corridor for individual projects. The plan shall be subject to the approval of CDFG and the Corps and approved prior to the impact to riparian resources. BIO-4 describes that the functions and values will be assessed for the riparian areas that will be removed, and BIO-2 and BIO-10 describe the replacement ratios for the habitats that will be impacted.

BIO-2 The permanent removal of existing habitats in Corps and/or CDFG jurisdictional areas in the Santa Clara River and tributaries shall be replaced by creating habitats of similar functions and values/services (see Mitigation Measure BIO-4 and Mitigation

Measure SW-3 of Section 4.6 of the Final EIS/EIR) on the Project site, or as allowed under Mitigation Measure BIO-10.

a. Permanent impacts to Corps jurisdiction (which is a subset of CDFG jurisdiction) are to be mitigated by initiating mitigation site creation and/or restoration in advance of impacts, to replace the combined loss of acreage, functions, and services at a minimum 1:1 ratio. Initiation of a Corps mitigation site is defined as: (1) completion of site preparation; (2) installation of temporary irrigation; and (3) seeding and/or planting of the mitigation site. For detailed information, please refer to the *Mitigation Plan for Impacts to Waters of the United States* included in the Draft 404(b)(1) Alternatives Analysis in Appendix F1.0 of the Final EIS/EIR. The Salt Creek creation and restoration site and the Mayo Crossing restoration site (i.e., an existing agricultural field) are considered the initial sites to be implemented prior to Corps jurisdictional impacts by development, thereby establishing upfront mitigation credits. As individual Project components are proposed for construction, consistent with the construction notification, quantities of mitigation acreage required to offset permanent impact acreages shall be calculated and compared to pre-mitigation area credits remaining. A project would not proceed unless adequate mitigation capacity is demonstrated. Temporary impact areas shall be mitigated in place in a manner that restores impacted functions and services as described in the mitigation plan noted above. If upfront compensatory mitigation cannot be achieved, a Corps-approved method would be utilized to determine the additional compensatory mitigation to offset the temporal loss of functions and services not included in the 1:1 mitigation ratio for permanent impacts.

   These measures satisfy the Corps mitigation requirements for impacts to Corps jurisdictional areas. However, impacts to jurisdictional areas (which include all areas subject to Corps and/or CDFG jurisdiction) are also subject to all of the mitigation requirements for impacts to CDFG jurisdiction, including BIO-2b.

b. For permanent and temporary impacts to CDFG jurisdiction, consistent with the sub-notification, quantities of mitigation acreage required shall be calculated in accordance with the criteria below:

   - If suitable mitigation sites have met success criteria (BIO-6) prior to disturbance at the impact site, the mitigation sites shall replace the permanently impacted habitats in kind at a 1:1 ratio.
   - If a suitable mitigation site has not met success criteria prior to disturbance of the impact site, habitat shall be replaced in kind (tributary for tributary impacts, river for river impacts) according to the replacement ratios specified in Table 4.5-68, below. These ratios provide compensatory mitigation for temporal losses of riparian function by considering the existing functional condition of

the resources to be impacted, as well as time required for different vegetation types to become established and mature.

- If a suitable mitigation site has not been initiated within two years following disturbance of the impact site, but is initiated within 5 years following such disturbance, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by Table 4.5-68, below, plus 0.5:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated three years after disturbance, the required replacement ratio would be 2.5:1.)
- If a suitable mitigation site has not been initiated within 5 years following disturbance of the impact site, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by Table 4.5-68, below, plus 1:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated six years after disturbance, the required replacement ratio would be 3:1.)

Where temporary impacts to CDFG-jurisdictional areas are proposed, the mitigation acreage required shall be determined based upon the duration of the proposed construction disturbance and the type of vegetation to be impacted. As individual Project components are proposed for construction, consistent with the sub-notification process, the quantities of mitigation acreage required for temporary impacts to CDFG jurisdictional areas shall be calculated according to the following criteria:

- If suitable mitigation sites have met success criteria prior to temporary disturbance at the impact site, the mitigation sites shall replace the temporarily impacted habitats in kind at a 1:1 ratio regardless of the duration of the temporary disturbance.
- If the duration of temporary disturbance is less than two years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality.
- If the duration of temporary disturbance is between two and five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1.5:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality.
- If the duration of temporary disturbance exceeds five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 2:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be

replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality.

In lieu of the habitat replacement described above and subject to CDFG approval, removal of invasive, exotic plant species from existing CDFG jurisdictional areas, followed by restoration/revegetation, may also be used to offset impacts. If this method is employed, mitigation shall be credited at an acreage equivalent to the percentage of exotic vegetation present at the restoration site. For example, if a 10-acre jurisdictional area is occupied by 10 percent exotic species, restoration shall be credited for 1 acre of impact. If appropriate, as authorized by CDFG, reduced percentage credits may be applied for invasive removal with passive restoration (weeding and documentation of natural recruitment only).

BIO-3 Creation of new vegetation communities and restoration of impacted vegetation communities shall occur at suitable sites in or adjacent to jurisdictional areas or in areas where bank stabilization would occur. Locations where the excavation of uplands for bank protection/stabilization results in creation of new, unvegetated riverbed or other disturbance shall receive the highest level of priority for vegetation community restoration. Restoration sites may also occur at locations outside the riverbed where there are appropriate hydrologic conditions to create a self-sustaining riparian vegetation community and where upland and riparian vegetation community values are absent or very low. All sites shall contain suitable hydrological conditions and surrounding land uses to ensure a self-sustaining functioning riparian vegetation community. Candidate restoration sites shall be described in the annual mitigation status report (BIO-12). Sites will be approved when the detailed wetlands mitigation plans are submitted to the Corps and CDFG as part of the sub-notification letters submitted for individual projects Status of the sites will be addressed as part of the annual mitigation status report and mitigation accounting form agency review. Each mitigation plan will include acreages, maps and site specific descriptions of the proposed revegetation site, including analysis of soils, hydrologic suitability, and present and future adjacent land uses.

BIO-4 Replacement vegetation communities shall be designed to replace the functions and values of the vegetation communities being removed. The replacement vegetation communities shall have similar dominant trees and understory shrubs and herbs (excluding exotic species) to those of the affected vegetation communities (see [EIS/EIR] Table 4.5-69 for example of recommended plant species for the River Corridor SMA and tributaries). In addition, the replacement vegetation communities shall be designed to replicate the density and structure of the affected vegetation communities once the replacement vegetation communities have met the mitigation success criteria.

BIO-5 Average plant spacing shall be determined based on an analysis of vegetation communities to be replaced. The applicant shall develop plant spacing specifications

for all riparian vegetation communities to be restored. Plant spacing specifications shall be reviewed and approved by the Corps and CDFG when restoration plans are submitted to the agencies as part of the sub-notification letters submitted to the Corps and CDFG for individual projects or as part of the annual mitigation status report and mitigation accounting form.

TABLE 4.5-68 CDFG JURISDICTIONAL PERMANENT IMPACTS MITIGATION RATIOS

RATIOS LISTED BY VEGETATION TYPES AND QUALITY

Vegetation Community	Veg Code/ID	High Reach Value[1] (Mit. Ratio)	Medium Reach Value[2] (Mit. Ratio)	Low Reach Value[3] (Mit. Ratio)
Southern Cottonwood-Willow Riparian Forrest	SCWRF	4:1	3:1	2:1
Southern Willow Scrub	SWS	3:1	2.5:1	2:1
Oak Woodland (Coast Live, Valley)	CLOW/VOW	3:1	2.5:1	2:1
Big Sagebrush Scrub	BSS	2.5:1	2:1	1.5:1
Mexican Elderberry Scrub	MES	2.5:1	2:1	1.5:1
Cismontane Alkaline Marsh	CAM	2.5:1	2:1	1.5:1
Coastal and Valley Fresh Water Marsh	CFWM	2:1	1.5:1	1:1
Mulefat Scrub	MFS	2:1	1.5:1	1.25:1
Arrowweed Scrub	AWS	2:1	1.5:1	1:1
California Sagebrush scrub, and CSB-dominated habitats	CSB, CSB-A, -BS, -CB, -CHP, and -PS	2:1	1.5:1	1:1
Herbaceous Wetland	HW	1.5:1	1.25:1	1:1
River Wash, emergent veg.	RW	1.5:1	1.25:1	1:1
Chaparral, Chamise Chaparral	CHP, CC	1.5:1	1.25:1	1:1
Coyote Brush Scrub	CYS	1.5:1	1.25:1	1:1
Eriodictyon Scrub	EDS	1.5:1	1.25:1	1:1
California Grass Lands	CGL	1:1	1:1	1:1
Agricultural/Disturbed/Developed	AGR/DL/DEV	1:1	1:1	1:1

[1] HIGH reach value indicates a portion of the Santa Clara River or main tributary that scored above 0.79 Total Score utilizing the HARC methodology described in Section 4.2, Geomorphology and Riparian Resources, of this EIS/EIR.

[2] MEDIUM reach value indicates a portion of the Santa Clara River or main tributary that scored between 0.4 and 0.79 Total Score utilizing the HARC methodology described in Section 4.2.

[3] LOW reach value indicates a portion of the Santa Clara River or main tributary that scored below 0.4 Total Score utilizing the HARC methodology described in Section 4.2.

TABLE 4.5-69 POTENTIAL PLANT SPECIES FOR VEGETATION COMMUNITY RESTORATION IN THE RIVER CORRIDOR SMA AND TRIBUTARIES

Common Name	Scientific Name
Trees	
Red willow	*Salix laevigata*
Arroyo willow	*Salix lasiolepis*
Fremont cottonwood	*Populus fremontii*
Black cottonwood	*Populus balsamifera* ssp. *trichocarpa*
Western sycamore	*Platanus racemosa*
Shrubs	
Mulefat	*Baccharis salicifolia*
Sandbar willow	*Salix exigua*
Arrow weed	*Pluchea sericea*
Herbs	
Mugwort	*Artemisia douglasiana*
Western ragweed	*Ambrosia psilostachya*
Cattail	*Typha latifolia*
Bulrush	*Scirpus americanus*
Prairie bulrush	*Scirpus maritimus*

Note: This is a recommended list. Other species may be found suitable based on site conditions and state and federal permits.

BIO-6 The revegetation site will be considered "complete" upon meeting all of the following success criteria. In a sub-notification letter, the applicant may request modification of success criteria on a project by project basis. Acceptance of such request will be at the discretion of CDFG and the Corps.

1. Regardless of the date of initial planting, any restoration site must have been without active manipulation by irrigation, planting, or seeding for a minimum of three years prior to Agency consideration of successful completion.
2. The percent cover and species richness of native vegetation shall be evaluated based on local reference sites established by CDFG and the Corps for the plant communities in the impacted areas.
3. Native shrubs and trees shall have at least 80 percent survivorship after two years beyond the beginning of the success evaluation start date. This may include natural recruitment.
4. Non-native species cover will be no more than 5 percent absolute cover through the term of the restoration.
5. Giant reed (*Arundo donax*), tamarisk (*Tamarix ramosissima*), perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissimus*), pampas grass (*Cortaderia selloana*) and any species listed on the California State Agricultural list, or Cal-IPC list of noxious weeds will not be present on the revegetation site as of the date of completion approval.

6. Using the HARC assessment methodology, the compensatory mitigation site shall meet or exceed the baseline functional scores of the impact area in jurisdictional waters of the United States. If the compensatory mitigation site cannot meet or exceed the baseline functional score of the impact area in Corps' jurisdictional waters.

BIO-7 If at any time prior to Agency approval of the restoration area, the site is subject to an act of "God" (e.g., flood, fires, or drought) the applicant shall be responsible for replanting the damaged area. The site will be subject to the same success criteria as provided for in BIO-6. Should a second act of God occur prior to Agency approval of the restoration area, the applicant shall coordinate with the Agencies and develop an alternative restoration strategy(ies) to meet success requirements. This may include restoration elsewhere in the river corridor or tributaries.

BIO-8 Temporary irrigation shall be installed as necessary for plant establishment. Irrigation shall continue as needed until the restoration site becomes self sustaining, regarding survivorship and growth. Irrigation shall be terminated in the fall to provide the least stress to plants.

BIO-9 In areas where invasive exotic plant species control is authorized by CDFG in-lieu of other riparian habitat mitigation (BIO-2), removal areas shall be kept free of exotic plant species for five years after initial treatment. In areas where extensive exotic removal occurs, revegetation with native plants or natural recruitment shall be documented.

BIO-10 The exotics control program may utilize methods and procedures in accordance with the provisions in the Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Final EIR, dated February 2006, or the applicant may propose alternative methods and procedures for Corps and CDFG review and approval pursuant to a sub-notification letter or annual mitigation status report submittal. Exotic plant species control will be credited at an acreage equivalent to the percentage of exotic vegetation at the restoration site. By example: a 10-acre site occupied by 10 percent exotic species will be credited for one acre of mitigation. The exotic weed control location will be documented on the annual mitigation status report and mitigation accounting form. If "in-lieu fees" are paid, it will be documented on the annual mitigation status report and mitigation accounting form, along with a reporting of the status of exotic vegetation treatment.

BIO-11 To provide an accurate and reliable accounting system for mitigation, the applicant utilizing the RMDP shall file a mitigation accounting form annually with the Corps and CDFG by April 1. This form shall document the amount of vegetation planted during the past year, any "in-lieu fees" paid for exotic invasive plant species control, the status of all mitigation credits to date, and any credits subtracted by projects implemented during the past year. The applicant, utilizing the RMDP, shall keep

detailed records and provide a mitigation accounting form to the Corps and CDFG annually for review for the life of the permit, or until all credits have been used up for individual projects, and success criteria have been met. The Corps and CDFG shall provide concurrence within 60 days, including written verification for all restoration and weed removal sites that meet the specified performance criteria. Adequate proof of delivery of applicable reports would be required as well as subsequent notice to the Agencies requesting surety release.

BIO-12 An annual mitigation status report shall be submitted to the Corps and CDFG by April 1 of each year until satisfaction of success criteria identified in BIO-6. This report shall include any required plans for plant spacing, locations of candidate restoration and weed control sites or proposed "in-lieu fees," restoration methods, and vegetation community restoration performance standards. For active vegetation community creation sites, the report shall include the survival, percent cover, and height of planted species; the number by species of plants replaced; an overview of the revegetation effort and its success in meeting performance criteria; the method used to assess these parameters; and photographs. For active exotics control sites, the report shall include an assessment of weed control; a description of the relative cover of native vegetation, bare areas, and exotic vegetation; an accounting of colonization by native plants; and photographs. The report shall also include the mitigation accounting form (see BIO-11), which outlines accounting information related to species planted or exotics control and mitigation credit remaining. The annual mitigation and monitoring report shall document the current functional capacity of the compensatory mitigation site using the HARC assessment methodology, as well as documenting the baseline functional scores of the impact site in jurisdictional waters of the United States.

BIO-13 The mitigation program shall incorporate applicable principles in the interagency Federal Guidance for the Establishment, Use, and Operation of Mitigation Banks (60 FR 58605–58614) to the extent feasible and appropriate, particularly the guidance on administration and accounting. Nothing in the section 404 or section 2081 Permit or section 1605 agreement shall preclude the applicant from selling mitigation credits to other parties wishing to use those permits or that agreement for a project and/or maintenance activity included in the permits/agreement.

BIO-14 Temporary impacts from construction activities in the riverbed shall be restricted to the following areas of disturbance: 1) an 85-foot-wide zone that extends into the river from the base of the rip-rap or gunite bank protection where it intercepts the river bottom; 2) 100 feet on either side of the outer edge of a new bridge or bridge to be modified; 3) a 60-foot-wide corridor for utility lines; 4) 20-foot-wide temporary access ramps; and 5) 60-foot roadway width temporary construction haul routes. The locations of these temporary construction sites and the routes of all access roads shall be shown on maps submitted with the sub-notification letter submitted to the Corps and CDFG for individual project approval. Any variation from these limits shall be

submitted, with a justification for a variation for Corps and CDFG approval. The construction plans should indicate what type of vegetation, if any, would be temporarily disturbed or removed and the post-construction activities to facilitate revegetation of the temporarily impacted areas. The boundaries of the construction site and any temporary access roads within the riverbed shall be marked in the field with stakes and flagging. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside the work area and access roads.

BIO-15 All native riparian trees with a three-inch diameter at breast height (dbh) or greater in temporary construction areas shall be replaced using 1- or 5-gallon container plants, containered trees, or pole cuttings in the temporary construction areas in the winter following the construction disturbance. The mitigation ratios for temporary impacts to vegetation communities are described in BIO-2. The growth and survival of the replacement trees shall meet the performance standards specified in BIO-6. In addition, the growth and survival of the planted trees shall be monitored until they meet the self sustaining success criteria in accordance with the methods and reporting procedures specified in BIO-6, BIO-7, BIO-11, and BIO-12.

BIO-16 Vegetation communities temporarily impacted by the proposed Project shall be revegetated as described in BIO-2. Large trunks of removed trees may also remain on site to provide habitat for invertebrates, reptiles, and small mammals or may be anchored within the Project site for erosion control. To facilitate restoration, mulch, or native topsoil (the top 6- to 12-inch deep layer containing organic material), may be salvaged from the work area prior to construction. Following construction, salvaged topsoil shall be returned to the work area and placed in the restoration site. Within one year, the Project biologist will evaluate the progress of restoration activities in the temporary impact areas to determine if natural recruitment has been sufficient for the site to reach performance goals. In the event that native plant recruitment is determined by the Project biologist to be inadequate for successful habitat establishment, the site shall be revegetated in accordance with the methods designed for permanent impacts (i.e., seeding, container plants, and/or a temporary irrigation system may be recommended). This will help ensure the success of mitigation areas. The applicant shall restore the temporary construction area per the success criteria and ratios described in BIO-1, BIO-2, and BIO-6. Annual monitoring reports on the status of the recovery of temporarily impacted areas shall be submitted to the Corps and CDFG as part of the annual mitigation status report (BIO-11 and BIO-12).

BIO-17 Focused surveys for arroyo toad shall be conducted. Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities, all construction sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of construction sites and access roads shall be surveyed at the appropriate season for arroyo toad. The applicant shall

contract with a qualified biologist to conduct focused surveys for arroyo toad. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the Service to CDFG and the Corps. The applicant shall implement measures required by the Service Biological Opinion that either supplement or supersede these measures. If arroyo toads are determined to be present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the Service and CDFG.

1) The applicant shall retain a qualified biologist with demonstrated expertise with arroyo toads to monitor all construction activities in potential arroyo toad habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the Service prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of arroyo toad.
2) Prior to the onset of construction activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:

    a. A detailed description of the arroyo toad, including color photographs;
    b. The protection the arroyo toad receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act;
    c. The protective measures being implemented to conserve the arroyo toad and other species during construction activities associated with the proposed Project; and
    d. A point of contact if arroyo toads are observed.

3) All trash that may attract predators of the arroyo toad will be removed from work sites or completely secured at the end of each work day.
4) Prior to the onset of any construction activities, the applicant shall meet on site with staff from the Service and the authorized biologist. The applicant shall provide information on the general location of construction activities within habitat of the arroyo toad and the actions taken to reduce impacts to this species. Because arroyo toads may occur in various locations during different seasons of the year, the applicant, the Service, and authorized biologists will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on arroyo toads. The goal of this effort is to reduce the level of mortality of arroyo toads during construction. The parties realize that if arroyo toads are present, complete prevention of all mortality is likely not possible because some arroyo toads may occur anywhere within suitable habitat during any given season; the detection of every individual over large areas is impossible because of the small size, fossorial habits, and cryptic coloration of the arroyo toad.

5) Where construction can occur in habitat where arroyo toads are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the Service /CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas.
6) The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any arroyo toads from within the fenced area to suitable habitat outside of the fence. If arroyo toads are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the Service /CDFG.
7) Fencing to exclude arroyo toads will be at least 24 inches in height.
8) The type of fencing must be approved by the authorized biologist and the Service /CDFG.
9) Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of arroyo toads may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly.
10) If arroyo toads are found within an area that has been fenced to exclude arroyo toads, activities will cease until the authorized biologist moves the arroyo toads.
11) If arroyo toads are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the arroyo toads. The authorized biologist in consultation with the Service /CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and the Service.
12) Any arroyo toads found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.
13) The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.
14) Staging areas for all construction activities will be located on previously disturbed upland areas designated for this purpose. All staging areas will be fenced within potential toad habitat.
15) To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times.

16) Drift fence/pitfall trap surveys will be implemented in toad sensitive areas prior to construction in an effort to reduce potential mortality to this species. Prior to any construction activities in the Project area, silt fence shall be installed completely around the proposed work area and a qualified biologist should conduct a preconstruction/clearance survey of the work area for arroyo toads. Any toads found in the work area should be relocated to suitable habitat. The silt fence shall be maintained for the duration of the work activity.
17) The applicant shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when arroyo toads may be present on the access road. Traffic speed should be maintained at 15 mph or less in the work area.

BIO-19 The 1,518-acre Salt Creek area shall be offered for dedication to the public pursuant to Condition 42 of the approved Specific Plan using a "rough step" land dedication approach. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1). The Salt Creek area includes approximately 629 acres of coastal scrub communities within both Ventura and Los Angeles counties. This land dedication shall be managed in conjunction with the 4,205-acre High Country SMA (containing 1,314 acres of coastal scrub communities).

a. To facilitate wildlife movement between the north side of SR-126 and the Salt Creek area, enhancements will be made to the existing agricultural undercrossing and to the agricultural land at the base of Salt Creek as discussed in BIO-59. A Wildlife Movement Enhancement Plan shall be submitted to the Corps and CDFG for approval prior to implementation. The plan shall include at the minimum the following:

    i. A portion of the agricultural field on the north side of SR-126 will be dedicated to wildlife movement. Trees and/or scrubs will be planted in the agricultural field to guide wildlife into the existing undercrossing.
    ii. On the south side of SR-126 two rows of trees/scrubs will be planted to guide wildlife to the Santa Clara River.
    iii. A wildlife corridor will be created through the agricultural fields at the base of Salt Creek Canyon.

BIO-20 Approximately 1,900 acres of coastal scrub shall be preserved on the Project site. The preservation of this vegetation type shall occur on site within the High Country SMA, the Salt Creek area, and the River Corridor SMA within the Specific Plan site. Irrevocable offers of dedication will be provided to CDFG for identified impact offsets in accordance with the Plan (BIO-1) using a "rough step" land dedication approach. Some of this habitat is recovering from wildfire and the expectation is that it will recover without active intervention. The functional values of any burned dedicated land areas shall be evaluated annually until such time that conditions are

commensurate with the quality of the impacted habitat being mitigated. In the event that the functional value of this burned habitat has not recovered within 5 years of the dedication due to invasive species, to fire ecology, erosion, drought, or unforeseen events, then adaptive management pursuant to BIO-21 will be implemented for coastal scrub restoration.

BIO-21 Supplemental restoration of coastal scrub shall be conducted as an adaptive management measure pursuant to BIO-20. Eight areas were identified in the Draft Newhall Ranch Mitigation Feasibility Report in the High Country SMA, Salt Creek area, and River Corridor SMA (Dudek 2007a) for coastal scrub restoration. In the event that coastal scrub restoration is required pursuant to BIO-20, the applicant shall develop a Coastal Scrub Restoration Plan, subject to the approval of CDFG. The plan shall specify, at a minimum, the following: 1) the location of mitigation sites to be selected from suitable mitigation land in the High Country and Salt Creek areas identified in the Feasibility Study; 2) a description of "target" vegetation (native shrubland) to include estimated cover and abundance of native shrubs; 3) site preparation measures to include topsoil treatment, soil decompaction, erosion control, temporary irrigation systems, or other measures as appropriate; 4) methods for the removal of non-native plants (e.g., mowing, weeding, raking, herbicide application, or burning); 5) the source of all plant propagules (e.g., seed, potted nursery stock, etc. collected from within five miles of the restoration site), the quantity and species of seed or potted stock of all plants to be introduced or planted into the restoration/enhancement areas; 6) a schedule and action plan to maintain and monitor the enhancement restoration areas, to include at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than 2 years; 7) as needed where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the restoration/enhancement areas; and 8) contingency measures such as replanting, weed control, or erosion control to be implemented if habitat improvement/restoration efforts are not successful.

Habitat restoration/enhancement will be judged successful when: 1) percent cover and species richness of native species reach 50 percent of cover and species richness at reference sites; and 2) the replacement vegetation has persisted at least one summer without irrigation.

Annual monitoring reports will be prepared and submitted to CDFG and will be made available to the public to guide future mitigation planning. Monitoring reports will describe all restoration/enhancement measures taken in the preceding year; describe success and completion of those efforts and other pertinent site conditions (erosion, trespass, animal damage) in qualitative terms; and describe vegetation survival or establishment in quantitative terms.

BIO-22 a. Newhall Land shall prepare an Oak Resource Management Plan, to be submitted for approval to CDFG and County of Los Angeles, and implemented upon approval. The Plan shall identify areas suitable for oak woodland enhancement and creation. The Plan shall distinguish between oaks to be planted in compliance with CLAOTO (BIO-22b) and the additional measures required by this EIS/EIR (BIO-2 for woodlands in jurisdictional streambeds; and BIO-22c and BIO-22d for upland areas).

The Oak Resource Management Plan shall include measures to create or enhance woodlands as follows: 1) locations and acreages of mitigation sites where woodland creation or enhancement will occur; 2) a description of proposed cover and number of native trees, shrubs, and grasses per acre to be established. This description shall be based on comparable intact woodlands in the area of impact or elsewhere within the RMDP planning area, consistent with conditions of the proposed mitigation site; 3) site preparation measures to include (as appropriate) topsoil treatment, soil decompaction, erosion control, weed grow/kill cycle, or as otherwise approved by the agencies; 4) methods for the removal of non-native plants (e.g., mowing, weeding, raking, herbicide application, or burning); 5) a plant palette listing all species, including sizes, planting densities, or seeding rates, to be based on target vegetation; 6) the source of all plant propagules (e.g., seed, potted nursery stock) and the quantity and species of seed or potted stock of all plants to be introduced or planted into the mitigation areas; 7) temporary irrigation, protection from herbivores, fertilizer, weeding, etc.; 8) a schedule and action plan to maintain and monitor the enhancement/restoration areas to include, at minimum, qualitative annual monitoring for revegetation success and site degradation due to erosion, trespass, or animal damage for a period no less than five years total and no less than two years after removal of irrigation (if any); 9) where sites are near trails or other access points, measures such as fencing, signage, or security patrols to exclude unauthorized entry into the mitigation areas shall be implemented as needed; 10) tree protection standards to be implemented for individual trees or woodlands adjacent to development activity; 11) success criteria as stated in BIO-22b and BIO-22d; and 12) contingency measures, such as replanting, erosion control, irrigation system repair, or understory re-seeding, to be implemented if habitat improvement/restoration efforts do not meet the success criteria stated in the plan.

b. To meet the minimum mitigation criteria set forth in CLAOTO, Newhall Land will replace impacted oaks (measuring 8 inches in diameter, or greater, or with a combined diameter of 12 inches for multi-stem oaks) at a ratio of 2:1. Additionally, oaks meeting the criteria for classification as a Heritage Tree (defined by CLAOTO as “any oak tree measuring 36 inches or more in diameter”) will be replaced at a ratio of 10:1. Whether they are planted in dedicated open space areas or developed areas, replacement oak trees planted in conformance with CLAOTO shall adhere to the following standards:

1. Replacement oak trees shall be exclusively indigenous species, shall be at least a 15-gallon size specimen, and measure at least one inch in diameter one foot above the base, unless otherwise approved by the County Forester.
2. Replacement trees shall be properly cared for and maintained for a period of two years and replaced by Newhall Land if mortality occurs within that period.
3. Replacement planting shall be conducted in phases as impacts occur. Alternatively, Newhall Land may choose to plant replacement trees in open space areas prior to realization of Project-related impacts (pre-mitigation). Any pre-mitigation shall adhere to the standards outlined herein.
4. Following completion of the two-year maintenance period, the County Forester shall provide final authorization that CLAOTO standards have been met.

c. In addition to the CLAOTO requirements (BIO-22b, above), this EIS/EIR requires replacement of oak trees at the ratios in the table below for trees lost or impacted in uplands. These trees are in addition to the CLAOTO requirement described above. These additional trees may also be incorporated into woodland habitat enhancement or creation, as described above. Additional replacement ratios are provided in [EIS/EIR] Table 4.5-70.

TABLE 4.5-70 ADDITIONAL BIO-22C OAK TREE REPLACEMENT RATIOS

Trunk Diameter[1]	Mitigation Ratio
8 – 35	0.5:1
36 +	2.5:1

[1] Trunk diameter measured at 4.5 feet above mean natural grade. Mitigation required for single-stem oaks with a minimum 8-inch diameter and multi-stem oaks with a combined diameter of 12 inches.

d. Newhall will mitigate lost oak woodlands occurring on upland sites (i.e., outside CDFG/Corps jurisdictional stream channels) by creating or enhancing oak woodlands in the Salt Creek area and High Country SMA. At minimum, Newhall Land will mitigate woodland habitat at a 1:1 ratio through creation of new oak woodlands. As an alternative, Newhall Land may choose to enhance, improve, and manage existing degraded woodland areas at a minimum 2:1 ratio for lost woodland acreage.

For woodland enhancement or replacement, dominant species (coast live oak or valley oak) and planting densities will be based on mitigation site suitability. All plant propagules, including acorns or tree cuttings and all seed or potted nursery stock of oaks or other species, shall be collected within a five-mile radius and within 1,000 feet elevation of the restoration site.

The woodland creation or enhancement sites shall be monitored for oak tree survival and vigor and other habitat values, including species diversity and wildlife use. The replacement or enhancement sites will be considered “complete” upon meeting all of

the following success criteria, or as otherwise approved by CDFG. Any replacement oak trees planted in woodlands for conformance with CLAOTO will also be subject to CLAOTO performance criteria (BIO-22b).

1. Regardless of the date of initial woodland creation or enhancement, each site must have been without active manipulation by irrigation, planting, or re-seeding for a minimum of three years prior to evaluation for successful completion.
2. The percent cover and species richness of restored or enhanced native vegetation shall be evaluated based on target vegetation described in the woodland creation or enhancement plan.
3. Densities (numbers/acre) of surviving, healthy oak shall be within 5 percent of the plan target density. Cover and species richness of other native shrubs shall reach 50 percent of the cover and species richness described for the "target" woodland. Optimal woodland densities and acorn planting quantities, by oak woodland type, are presented in [EIS/EIR] Table 4.5-71.

TABLE 4.5-71 OPTIMAL WOODLAND DENSITIES AND ACORN PLANTING QUANTITIES, BY OAK WOODLAND TYPE

Woodland Type	Average Existing Woodland Density (Trees per Acre)	Target Density for Newhall Land (Trees per Acre)
Coast live oak woodland	22	50
Mixed oak woodland	19	40
Valley oak woodland	16	25

4. Non-native grass cover shall not exceed the "target" woodland non-native grass cover, and other non-native species shall not exceed 10 percent cover at any time. Any species listed on the California State Agricultural list (CDFA 2009) or Cal-IPC list of noxious weeds (Cal-IPC 2006, 2007) will not be present on the revegetation site at the time that project success is determined.

BIO-42 All oaks that will not be removed that are regulated under CLAOTO with driplines within 50 feet of land clearing (including brush clearing) or areas to be graded shall be enclosed in a temporary fenced zone for the duration of the clearing or grading activities. Fencing shall extend to the root protection zone (i.e., the area at least 15 feet from the trunk or five feet beyond the drip line, whichever distance is greater). No parking or storage of equipment, solvents, or chemicals that could adversely affect the trees shall be allowed within 25 feet of the trunk at any time. Removal of the fence shall occur only after the Project arborist or qualified biologist confirms the health of preserved trees.

BIO-43 Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities that result in any disturbance to the banks or wetted channel, aquatic habitats within construction sites and access roads, as well as all aquatic habitats within 300 feet of construction sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps

and CDFG shall be notified at least 14 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any construction work in the riverbed. If there is evidence that fish spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by the Service. If surveys determine that gravid fish are present, that spawning has recently occurred, or that juvenile fish are present in the proposed construction areas, all activities within aquatic habitat will be suspended. Construction within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area.

BIO-44 Temporary bridges, culvert crossings, or other feasible methods of providing access across the river shall be constructed outside of the winter season and not during periods when spawning is occurring. Prior to the construction of any temporary or permanent crossing of the Santa Clara River, the applicant shall develop a Stream Crossing and Diversion Plan. The plan shall include the following elements: the timing and methods for pre-construction aquatic species surveys; a detailed description of the diversion methods (e.g., berms shall be constructed of on-site alluvium materials of low silt content, inflatable dams, sand bags, or other approved materials); special-status species relocation; fish exclusion techniques, including the use of block netting and fish relocation; methods to maintain fish passage during construction; channel habitat enhancement, including the placement of vegetation, rocks, and boulders to produce riffle habitat; fish stranding surveys; and the techniques for the removal of crossings prior to winter storm flows. The Plan shall be submitted to the Service and CDFG for approval at least 30 days prior to implementation.

If adult special-status fishes are present and spawning has not occurred, they shall be relocated prior to the diversion or crossing. Block nets of 1/8-inch woven mesh will be set upstream and downstream. On days with possible high temperature or low humidity (temperatures in excess of 80 degrees F), work will be done in the early morning hours, as soon as sufficient light is available, to avoid exposing fishes to high temperatures and/or low humidity. If high temperatures are present, the fishes will be herded to downstream areas past the block net. Once the fishes have been excluded by herding, a Service staff member or his or her agents shall inspect the site for remaining or stranded fish. A Service staff member or his or her agents shall relocate the fish to suitable habitat outside the Project area (including those areas potentially subject to high turbidity). During the diversion/relocation of fishes, the Service or his or her agents shall be present at all times.

BIO-45a Stream diversion bypass channels: Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/Service. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/Service.

The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/Service, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (i.e., boulders, large logs, or other CDFG/Service-approved materials) placed in the channel at the point of each curve (i.e., on alternating sides of the channel). If emergent aquatic vegetation is present in the original channel, the applicant will transplant suitable vegetation into the diversion channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed construction areas. At the conclusion of the diversion, either at the commencement of the winter season, or the completion of construction, the applicant will coordinate with CDFG/Service to determine if the diversion should be left in place or the stream returned to the original channel. If CDFG/Service determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (i.e., while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (i.e., boulders, large logs, or other CDFG/Service-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place.

BIO-45b Dewatering: Construction dewatering in close proximity to stream flow shall implement the following:

- Assess local stream and groundwater conditions, including flow depths, groundwater elevations, and anticipated dewatering cone of influence (radius of draw down).
- Assess surface water elevations upstream, adjacent to, and downstream of the extraction points, to assess any critical flow regimes susceptible to excessive draw down and therefore fish stranding issues.
- Assess surface water elevations downstream of the discharge locations (if discharge is proposed to the flowing stream) to assess any flow regimes and overbank areas that may be susceptible to flooding and therefore fish stranding at the cessation of discharge. Discharge locations shall also be assessed for potential channel bed erosion from dewatering discharge, and appropriate BMPs must be implemented to prevent excessive erosion or turbidity in the discharge.

- The information above shall be summarized and provided in a plan approved by CDFG and Corps.
- Fish shall be excluded from any artificial flowing channels from dewatering discharge. Methods to ensure separation may include, but are not limited to: block netting at the confluence; creation of a physical drop greater than four inches at the confluence; or maintaining a velocity range unsuitable for fish passage, such as a berm at the confluence with small diameter pipes for discharge.

BIO-46 During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless Service personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and the Service within 24 hours.

BIO-47 Slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area to provide refuge for special-status fishes during construction. Where feasible and in consultation with CDFG and the Service, the applicant shall enhance slow-moving water habitats for each linear foot disturbed by hand-excavating shallow side channels and placing multiple sets of obstructions (e.g., boulders, large logs, or other CDFG- and the Service-approved materials) in the channel.

BIO-48 Installation of bridges, culverts, or other structures shall not impair the movement of fish and aquatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert crossings shall include provisions for a low flow channel where velocities are less than 2 feet per second to allow fish passage.

BIO-49 Water containing mud, silt, or other pollutants from construction activities shall not be allowed to enter a flowing stream or be placed in locations that may be subject to normal storm flows during periods when storm flows can reasonably be expected to occur.

BIO-51 Bridges over the Santa Clara River shall be designed to minimize impacts to natural areas and riparian resources from associated lighting and stormwater runoff. All lighting will be designed to be directed away from natural areas (pursuant to SP-4.6-56) using shielded lights, low sodium-vapor lights, bollard lights, or other available light and glare minimization methods. Bridges will be designed to minimize normal vehicular lighting from trespassing into natural areas using side walls a minimum of 24 inches high. All stormwater from the bridges will be directed to water treatment facilities for water quality treatment.

BIO-52 Prior to grading and construction activities, a qualified biologist shall be retained to conduct a Worker Environmental Awareness Program (WEAP) for all construction/contractor personnel. A list of construction personnel who have completed training prior to the start of construction shall be maintained on site and this list shall be updated as required when new personnel start work. No construction worker may work in the field for more than 5 days without participating in the WEAP. The qualified biologist shall provide ongoing guidance to construction personnel and contractors to ensure compliance with environmental/permit regulations and mitigation measures. The qualified biologist shall perform the following:

- Provide training materials and briefings to all personnel working on site. The material shall include but not be limited to the identification and status of plant and wildlife species, significant natural plant community habitats (e.g., riparian), fire protection measures, and review of mitigation requirements.
- A discussion of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, other state or federal permit requirements and the legal consequences of non-compliance with these acts;
- Attend the pre-construction meeting to ensure that timing/location of construction activities do not conflict with other mitigation requirements (e.g., seasonal surveys for nesting birds, pre-construction surveys, or relocation efforts);
- Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas. Maps showing the location of special-status wildlife or populations of rare plants, exclusion areas, or other construction limitations (e.g., limitations on nighttime work) will be provided to the environmental monitors and construction crews prior to ground disturbance. This applies to preconstruction activities, such as site surveying and staking, natural resources surveying or reconnaissance, establishment of water quality BMPs, and geotechnical or hydrological investigations;
- Discuss procedures for minimizing harm to or harassment of wildlife encountered during construction and provide a contact person in the event of the discovery of dead or injured wildlife;
- Review/designate the construction area in the field with the contractor in accordance with the final grading plan;
- Ensure that haul roads, access roads, and on-site staging and storage areas are sited within grading areas to minimize degradation of vegetation communities adjacent to these areas (if activities outside these limits are necessary, they shall be evaluated by the biologist to ensure that no special-status species habitats will be affected);
- Conduct a field review of the staking (to be set by the surveyor) designating the limits of all construction activity;
- Flag or temporarily fence any construction activity areas immediately adjacent to riparian areas;

- Ensure and document that required pre-construction surveys and/or relocation efforts have been implemented;
- To reduce the potential for the spread of New Zealand mud snails and weeds (including weed seeds) during Project clearing and construction, all heavy equipment proposed for use on the Project site shall be verified cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the Project site. Equipment must be documented as mud snail and weed free upon delivery to the Project site initial staging area, including: (1) vegetation clearing equipment (skid steer loaders, loaders, dozers, backhoes, excavators, chippers, grinders, and any hauling equipment, such as off-road haul trucks, flat bed, or other vehicles); (2) earth-moving equipment (scrapers, dozers, excavators, loaders, motor-graders, compactors, backhoes, off-road water trucks, and off-road haul trucks); and (3) all Project-associated vehicles (including personal vehicles) that, upon inspection by the monitoring biologist, are deemed to present a risk for spreading mud snails or weeds. Equipment shall be cleaned at existing construction yards or at a wash station. The biological monitor shall document that all construction equipment (as described above) has been cleaned prior to working within the Project work site. Any equipment/vehicles determined to not be free of mud snails and weeds shall immediately be sent back to the originating construction yard for washing, or wash station where rinse water is collected and disposed of in either a sanitary sewer or other legal point of disposal. Equipment/vehicles moved from the site must be inspected, and re-washed as necessary, prior to re-engaging in construction activities in the Project work area. A written daily log shall be kept for all vehicle/equipment washing that states the date, time, location, type of equipment washed, methods used, and location of work;
- Be present during initial vegetation clearing and grading; and
- Submit to CDFG an immediate report (within 72 hours) of any conflicts or errors resulting in impacts to special-status biological resources.

BIO-55 a. As a supplement to BIO-1 through BIO-16, additional habitat mitigation through replacement or enhancement of nesting/foraging habitat for least Bell's vireo will be provided for certain key habitat zones at higher ratios (identified as "key population areas" in [EIS/EIR] Figure 4.5-86, Alternative 2 Impacts to Least Bell's Vireo Habitat). Southern willow scrub, southern cottonwood–willow riparian, arrow weed scrub, mulefat scrub, and Mexican elderberry scrub and woodland that provide nesting/foraging habitat for least Bell's vireo in "key population areas" shall be replaced or enhanced. All permanent loss to nesting/foraging habitat in key population areas shall be mitigated at a 5:1 ratio unless otherwise authorized by CDFG or the Service. Temporary habitat loss of foraging/nesting habitat in key population areas shall be mitigated at a 2:1 ratio. The requirements for replacing habitat by either creating new habitat or removing exotic species from existing habitat shall follow the procedures outlined in BIO-1 through BIO-16. To replace the lost functions of habitat located adjacent to the Santa Clara River due to noise impacts, all

nesting/foraging habitat within the 60 dBA sound contour (associated with development site roadway improvements) shall be considered degraded. Nesting/foraging habitat within this area shall be mitigated at a ratio of 2:1.

b. The loss of documented occupied nesting habitat for coastal California gnatcatcher shall be mitigated. If the coastal California gnatcatcher is identified nesting on site, the applicant will acquire or preserve nesting coastal California gnatcatcher habitat at a 3:1 ratio for impacts to documented occupied habitat, or by the ratio specified in BIO-2, whichever is greater. Mitigation acquisition shall occur at an agreed-upon location as approved by the Service upon consultation. The applicant shall enter into a binding legal agreement regarding the preservation of occupied habitat describing the terms of the acquisition, enhancement, and management of those lands.

BIO-56 Within 30 days of ground-disturbing activities associated with construction or grading that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March through August in the Project region, or as determined by a qualified biologist), the applicant shall have weekly surveys conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the disturbance zone or within 300 feet (500 feet for raptors) of the disturbance zone. Pre-construction surveys shall include nighttime surveys to identify active rookery sites. The surveys shall continue on a weekly basis, with the last survey being conducted no more than 7 days prior to initiation of disturbance work. If ground-disturbing activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than seven days will have elapsed between the survey and ground-disturbing activities.

If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted, at the discretion of the biologist in consultation with CDFG, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In the event that golden eagles establish an active nest in the River Corridor SMA, the buffers will be established in consultation with CDFG. Potential golden eagle nesting will be reported to CDFG within 24 hours. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFG in the annual mitigation status report.

For listed riparian songbirds (least Bell’s vireo, southwestern willow flycatcher, yellow-billed cuckoo) Service protocol surveys shall be conducted. If active nests are found, clearing and construction within 300 feet of the nest shall be postponed or

halted, at the discretion of the biologist in consultation with CDFG and the Service, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. If no active nests are observed, construction may proceed. If active nests are found, work may proceed provided that construction activity is located at least 300 feet from active nests (or as authorized through the context of the Biological Opinion and 2081b Incidental Take Statement). This buffer may be adjusted provided noise levels do not exceed 60 dBA hourly Leq at the edge of the nest site as determined by a qualified biologist in coordination with a qualified acoustician.

If the noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the construction activities are disturbing nesting activities, the biologist shall have the authority to halt the construction and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the construction activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dBA Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, construction shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to CDFG and the Service.

For coastal California gnatcatcher, the applicant shall conduct Service protocol surveys in suitable habitat within the Project area and all areas within 500 feet of access or construction-related disturbance areas. Suitable habitats, according to the protocol, include “coastal sage scrub, alluvial fan, chaparral, or intermixed or adjacent areas of grassland and riparian habitats.” A permitted biologist shall perform these surveys according to the Service’ Coastal California Gnatcatcher Presence/Absence Survey Guidelines. If a territory or nest is confirmed, the Service and CDFG shall be notified immediately. If present, a 500-foot disturbance-free buffer shall be established and demarcated by fencing or flagging. No Project activities may occur in these areas unless otherwise authorized by the Service and CDFG. Construction activities in suitable gnatcatcher habitat will be monitored by a full-time qualified biologist. The monitoring shall be of a sufficient intensity to ensure that the biologist could detect the presence of a bird in the construction area.

BIO-62 At least 1,900 acres of Open Area within the Specific Plan area shall be offered for dedication to an NLMO in fee and/or by conservation easement. These 1,900 acres of the Open Area will be left as natural vegetation. Dedication of open areas lands shall be reported annually to CDFG.

BIO-63 Each tract map Home Owners' Association shall supply educational information to future residents regarding pets, wildlife, and open space areas. The material shall discuss the presence of native animals (e.g., coyote, bobcat, and mountain lion), indicate that those native animals could prey on pets, indicate that no actions shall be taken against native animals should they prey on pets allowed outdoors, and indicate that pets must be leashed while using the designated trail system and/or in any areas within or adjacent to open space. Control of stray and feral cats and dogs will be conducted in open space areas on an as-needed basis by the NLMO(s) or the Newhall Ranch joint powers authority (JPA) managing the River Corridor SMA, High Country SMA, or Salt Creek area or by the HOAs managing the Open Areas. Feral cats and dogs may be trapped and deposited with the local Society for the Prevention of Cruelty to Animals or the Los Angeles County Department of Animal Control.

BIO-64 An integrated pest management (IPM) plan that addresses the use of pesticides (including rodenticides and insecticides) on site will be prepared prior to the issuance of building permits for the initial tract map. The IPM will implement appropriate Best Management Practices to avoid and minimize adverse effects on the natural environment, including vegetation communities, special-status species, species without special status, and associated habitats, including prey and food resources (e.g., insects, small mammals, seeds). Potential management practices include 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.

BIO-69 The Newhall Ranch JPA will have overall responsibility for recreation within and conservation of the High Country. The Newhall Ranch JPA and NLMO shall develop and implement a conservation education and citizen awareness program for the High Country SMA informing the public of the special-status resources present within the High Country SMA and providing information on common threats posed by the presence of people and pets to those resources. The NLMO shall install trailhead and trail signage indicating the High Country SMA is a biological conservation area and advising that people and their animals must stay on existing trails at all times and that violators may be cited. The NLMO shall provide quarterly maintenance patrols to remove litter and monitor trail expansion and fire hazards within the High Country SMA, funded by the JPA.

BIO-70 Construction plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction. In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP) shall include the following minimum BMPs. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP, and noted on construction plans where appropriate, to avoid impacting special-status species during construction:

- Avoid planting or seeding invasive species in development areas within 200 feet of native vegetation communities.
- Provide location and details for any dust control fencing along Project boundaries (BIO-71).
- Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the 404 Permit or 1603 Agreement.
- Silt settling basins installed during the construction process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes.
- If a stream channel has been altered during the construction and/or maintenance operations, its low flow channel shall be returned as nearly as practical to pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre-Project grade, to the extent practical, unless it represents a wetland restoration area.
- Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.
- Staging/storage areas for construction equipment and materials shall be located outside of the ordinary high water mark.
- Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water.
- Stationary equipment such as motors, pumps, generators, and welders which may be located within the riverbed construction zone shall be positioned over drip pans. No fuel storage tanks shall be allowed in the riverbed.
- No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any construction, or associated activity of whatever nature, shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the

permit. When construction operations are completed, any excess materials or debris shall be removed from the work area.

- No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow.
- The operator shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.
- The operator shall not permit pets on or adjacent to the construction site.
- No guns or other weapons are allowed on the construction site during construction, with the exception of the security personnel and only for security functions. No hunting shall be authorized/permitted during construction.

BIO-71 Development areas shall have dust control measures implemented and maintained to prevent dust from impacting vegetation communities and special-status plant and aquatic wildlife species. Dust control shall comply with SCAQMD Rule 403d (SCAQMD 2005). Where construction activities occur within 100 feet of known special-status plant species locations, chemical dust suppression shall not be utilized. Where determined necessary by a qualified biologist, a screening fence (i.e., a 6-foot-high chain link fence with green fabric up to a height of 5 feet) shall be installed to protect special-status species locations.

BIO-72 Plant palettes proposed for use on landscaped slopes, street medians, park sites, and other public landscaped and FMZ areas within 200 feet of native vegetation communities shall be reviewed by a qualified restoration specialist to ensure that the proposed landscape plants will not naturalize and require maintenance or cause vegetation community degradation in the open space areas (River Corridor SMA, High Country SMA, Salt Creek area, and natural portions of the Open Area). Container plants to be installed within public areas within 200 feet of the open space areas shall be inspected by a qualified restoration specialist for the presence of disease, weeds, and pests, including Argentine ants. Plants with pests, weeds, or diseases shall be rejected. In addition, landscape plants within 200 feet of native vegetation communities shall not be on the Cal-IPC California Invasive Plant Inventory (most recent version) or on the list of Invasive Ornamental Plants listed in Appendix B of the SCP. The current Cal-IPC list can be obtained from the Cal-IPC web site (http://www.cal-ipc.org/ip/inventory/index.php). Landscape plans will include a plant palette composed of native or non-native, non-invasive species that do not require high irrigation rates. Except as required for fuel modification, irrigation of perimeter landscaping shall be limited to temporary irrigation (i.e., until plants become established).

BIO-73 Permanent fencing shall be installed along all River Corridor SMA trails adjacent to the Santa Clara River, or other sensitive resources, in order to minimize impacts associated with increased human presence on protected vegetation communities and

special-status plant and wildlife species. The fencing will be split rail to avoid inhibiting wildlife movement. Viewing platforms will be located in land covers currently mapped as agriculture, disturbed land, or developed land.

BIO-74 To protect Middle Canyon Spring and to reduce potential direct impacts to any special-status species that may be located within the spring complex due to unrestricted access, the Project applicant or its designee shall avoid all construction-related activities within the Middle Canyon Spring complex and erect and maintain temporary orange fencing and prohibitive signage around the Middle Canyon Spring prior to and during all phases of construction within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. A qualified biologist will be present to monitor construction activities within 200 feet of the spring and, if applicable, around the Middle Canyon drainage within 100 feet of flowing water. The areas behind the temporary fencing shall not be used for the storage of any equipment, materials, construction debris, or anything associated with construction activities. Any upslope runoff from construction areas will be directed away from the Middle Canyon Spring. Following the final phase of construction of any Newhall Ranch subdivision tract adjacent to Middle Canyon Spring, the Project applicant or its designee shall install and maintain permanent fencing along the subdivision tract bordering the spring. Permanent signage shall be installed on the fencing along the spring boundary to indicate that the fenced area is a biological preserve that contains protected species and habitat. No trail shall be constructed that passes within 100 feet of the Middle Canyon Spring.

a. As described in BIO-51, the Commerce Center Drive Bridge will be designed to minimize secondary impacts associated with lighting and water quality impacts through the installation of indirect and downcast lighting, and routing of stormwater to water quality treatment facilities.

BIO-78 A cowbird trapping program shall be implemented once vegetation clearing begins and maintained throughout the construction, maintenance, and monitoring period of the riparian restoration sites. A minimum of five traps shall be utilized, with at least one trap adjacent to the project site and one or two traps located at feeding areas or other CDFG-approved location. The trapping contractor may consult with CDFG to request modification of the trap location(s). CDFG must approve any relocation of the traps. Traps will be maintained beginning each year on April 1 and concluding on/or about November 1 (may conclude earlier, depending upon weather conditions and results of capture). The trapping contractor may also consult CDFG on a modified, CDFG-approved trapping schedule modification. The applicant shall follow CDFG and the Service protocol. In the event that trapping is terminated after the first few years, subsequent phases of the RMDP development will require initiation of trapping surveys to determine whether re-establishment of the trapping program is necessary.

BIO-80 The Project applicant will retain a qualified biologist to develop an Exotic Wildlife Species Control Plan and implement a control program for bullfrog, African clawed frog, and crayfish. The program will require the control of these species during construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures). The Plan shall include a description of the species targeted for eradication, the methods of harvest that will be employed, the disposal methods, and the measures that would be employed to avoid impacts to sensitive wildlife (e.g., stickleback, arroyo toad, nesting birds) during removal activities (i.e., timing, avoidance of specific areas). Annual monitoring shall occur for the first 5 years after construction of Project facilities. After 5 years, bi-annual monitoring shall occur in perpetuity to determine if additional control is necessary. The Project applicant will fund an endowment, approved by CDFG, for monitoring in perpetuity. Monitoring will be conducted within sentinel locations along the River Corridor SMA and where the Project provides potential habitat for these species (e.g., future ponds and water features). Control shall be conducted within Project facilities where monitoring results indicate that exotic species have colonized an area.

BIO-81 The installation of new, or relocation of existing, utility poles and phone and cell towers shall be coordinated with CDFG where located in the High Country SMA and Salt Creek area. The applicant or SCE shall install utility poles, phone, and cell towers in conformance with APLIC standards for collision-reducing techniques as outlined in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006).

BIO-82a. All surfaces on new antennae and phone/utility towers shall be designed and operated with anti-perching devices in conformance with APLIC standards to deter California condors and other raptors from perching. During construction the area shall be kept clean of debris, such as cable, trash, and construction materials. The applicant shall collect all microtrash and litter (anything shiny, such as broken glass), vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash: what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash.

b. The applicant shall retain a qualified biologist with knowledge of California condors to monitor construction activities within the Project area. The resumes of the proposed biologist(s) will be provided to CDFG for concurrence. This biologist(s) will be referred to as the authorized biologist hereafter. During clearing and grubbing of construction areas, the qualified biologist shall be present at all times. During mass grading, construction sites shall be monitored on a daily basis. The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed. If condors are observed landing in the Project area, the applicant shall avoid further construction within 500 feet of the sighting until the animals have left the area, or as otherwise authorized by CDFG and the Service. All condor sightings in the Project area will be reported to CDFG and the Service 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 1 hour after sunrise, or until the condors leave the area, or as otherwise directed by the Service. 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 the Service.

c. To further protect California condor potentially foraging in the Project area over the long term from negative interactions with humans and/or artificial structures, the applicant or the JPA or the NLMO shall remove dead cattle that are found or reported within 1,000 feet of a residential or commercial development boundary. Dead cattle shall be relocated to a predetermined location within the High Country SMA or Salt Creek area. The locations where carcasses shall be placed shall be a minimum of 1,000 feet from a development area boundary. Appropriate locations for transfer of carcasses include open grasslands and oak/grassland areas where condors can readily detect carcasses and easily land and take off without encountering physical obstacles such as powerlines and other utility structures. The proposed locations would be selected and approved by the CDFG and the Service. Pursuant to this measure, a telephone number for reporting dead cattle shall be provided and actively maintained. Any cattle carcasses transferred to the relocation areas shall be reported to the Service Condor group.

APPENDIX C

The Declining Amphibian Populations Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each work site.

2. Boots, nets, traps, and other types of equipment used in the aquatic environment should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond. wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or "base camp" Elsewhere, when washing-machine facilities are available, remove nets from poles and wash in a protective mesh laundry bag with bleach on the "delicates" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable vinyl[4] gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean them as directed above and store separately at the end of each field day.

5. When amphibians are collected, ensure that animals from different sites are kept separately and take great care to avoid indirect contact (e.g., via handling, reuse of containers) between them or with other captive animals. Isolation from unsterilized plants or soils which have been taken from other sites is also essential. Always use disinfected and disposable husbandry equipment.

6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.

7. Used cleaning materials and fluids should be disposed of safely and, if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

[4] Do not use latex gloves. Latex is toxic to amphibians.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.
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Appendix 2D

Record of Decision

United States Army Corps of Engineers

August 31, 2011

RECORD OF DECISION

As the District Commander for the Los Angeles District, I have reviewed the Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the *Newhall Ranch Resource Management and Development Plan, Santa Clarita, Los Angeles County, California.* The EIS/EIR, prepared in compliance with the Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* and U.S. Army Corps of Engineers (USACE or Corps) regulations at 33 C.F.R. Parts 320-332, assesses the impacts of implementing the proposed project on the biological, physical, and socioeconomic environment. The EIS/EIR is hereby incorporated by reference. The USACE will proceed as indicated herein.

I. INTRODUCTION

A. Location: The 12,000-acre project site encompasses approximately 5.5 linear miles of the Santa Clara River and several tributaries to the Santa Clara River, including Potrero Canyon, Long Canyon, Middle Canyon, Lion Canyon, Chiquito Canyon and San Martinez Grande Canyon, near the city of Santa Clarita, northwestern Los Angeles County, California (at: lat:34-24-5.0040 lon:118-37-46.9920).

B. Background, General Description and Public Involvement:

1. On 15 December 2003, The Newhall Land and Farming Company applied to the USACE for a Department of the Army Standard Individual Permit (SIP), pursuant to section 404 of the Clean Water Act (CWA)(33 U.S.C. 1344) to permanently impact 93.3 acres, including 20.5 acres of wetlands, 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 (RMDP) near the city of Santa Clarita, northwestern Los Angeles County, California. The 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 (msf) 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 of the project site, and an additional 1,517 acres of open space in the Salt Creek watershed adjacent to the project site (for a total of approximately 10,200 acres of open space within the project site including the Salt Creek preservation area). The open space would also include land dedicated to the preservation of the San Fernando Valley spineflower (spineflower).

2. The USACE and the California Department of Fish and Game (CDFG) prepared a joint Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) pursuant to the

National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The EIS/EIR evaluated and disclosed the direct, indirect/secondary and cumulative environmental impacts anticipated from the originally proposed project and alternatives, which included analysis of the proposed infrastructure and other components including debris and detention basins, bank stabilization, water quality control facilities, bridges, culverted road crossings, grade control structures, utilities, habitat enhancement, temporary haul routes, storm drains and geotechnical survey activities. In addition, the existing natural channels for some of the drainages would be realigned, recontoured, or converted to buried storm drain systems to accommodate some areas for the proposed development.

3. To facilitate public involvement in both the NEPA and Section 404 process, a Notice of Intent to prepare an EIS/EIR was first published in the Federal Register (FR) on 26 January 2000. A public scoping meeting was held on 9 February 2000 to solicit comments on the proposed project. Comments were received until 26 February 2000. After a substantial delay for litigation associated with the Specific Plan EIR, a second Notice of Intent was published in the FR on 29 January 2004. A second public scoping meeting was held on 19 February 2004 to solicit comments on the proposed project. Comments were received until 5 March 2004. Following the addition of a Spineflower Conservation Plan (SCP) to the proposed project, a third Notice of Intent was published in the FR by the USACE on 19 July 2005, with a third public scoping meeting occurring on 24 August 2005 and comments being received until 2 September 2005. All of the comments received were considered in preparing the Draft EIS/EIR. A Notice of Availability of the Draft EIS/EIR for review and comment was published in the FR on 4 May 2009 and a public notice for the section 404 permit application was issued on the same day. Approximately 50 hard copies of the Draft EIS/EIR were distributed to agencies, organizations and individuals and were made available at five public libraries in Santa Clarita, Piru and Ventura as well as the Corps Ventura field office and the CDFG office in San Diego. In addition, the document was also posted on the CDFG's website: http://www.dfg.ca.gov/regions/5/newhall/. A public hearing to solicit comments on the Draft EIS/EIR was held on 9 June 2009. The public comment period for the Draft EIS/EIR ended on 25 August 2009. All comments received were considered in preparing the Final EIS/EIR. A Notice of Availability of the Final EIS/EIR was published in the FR on 17 June 2010, which included a Draft General Conformity Determination (Appendix 7.1 to the Final EIS/EIR). Approximately 50 hard copies of the Final EIS/EIR were distributed to agencies, organizations and individuals and were made available at five public libraries in Santa Clarita, Piru and Ventura as well as the Corps Ventura field office and the CDFG office in San Diego. In addition, the document was also posted on the CDFG's website: http://www.dfg.ca.gov/regions/5/newhall/. In addition, a second public notice for the section 404 permit application was issued on 17 June 2010. The public comment period for the Final EIS/EIR ended on 3 August 2010. Responses to the comments received during the review period are provided in **Appendix B**. On 3 December 2010, the CDFG certified the EIR and issued a Notice of Determination and Decision in compliance with Public Resources Code Section 21108 (State Clearinghouse Number: 2000011025). The certified EIR and the Final EIS include an addendum, which are provided in **Appendix F**. With the completion the CEQA process, CDFG issued a Master Streambed Alteration Agreement (No. 1600-2004-0016-R5) and Incidental Take Permits (Nos. 2081-2008-012 and 2081-2008-013-05).

4. The Newhall Land and Farming Company's revised proposed project is equivalent to a modified version of Alternative 3, as identified and evaluated in the Final EIS/EIR dated June 2010 (Draft Least Environmentally Damaging Practicable Alternative (LEDPA)). Subsequent to the issuance of the Final EIS/EIR, the Corps identified a less damaging practicable alternative that includes additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, similar to the Draft LEDPA that was evaluated in the Final EIS/EIR, and includes the following project components that require authorization under section 404 of the CWA:

- Permanent impacts to 47.9 acres of waters of the United States, including 5.1 acres of wetlands, associated with discharges of fill material for bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); drainage facilities such as storm drains or outlets and partially lined open channels; grade control structures; bridges and drainage crossings; building pads; and water quality control facilities (sedimentation control, flood control, debris, and water quality basins).

- Temporary impacts to 35.3 acres of waters of the United States, including 11.8 acres of wetlands, associated with the construction of bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); utility crossings; activities associated with construction of a Water Reclamation Plant (WRP) adjacent to the Santa Clara River and required bank protection; water quality control facilities (sedimentation control, flood debris, and water quality basins); regular and ongoing maintenance of all flood, drainage, and water quality protection structures and facilities on the RMDP site (such activities would include periodic inspection of structures and monitoring of vegetation growth and sediment buildup to ensure that the integrity of the structures is maintained and that planned conveyance capacity is present, routine repairs and maintenance of bridges and bank protection, and emergency maintenance activities); and temporary haul routes for grading equipment and geotechnical survey activities.

The revised project design would include a total of approximately 26,851 linear feet (lf) of bank stabilization in the Santa Clara River (19,158 lf on the North Bank and 7,693 lf on the South Bank); 35 outlets in the Santa Clara River; construction of two bridges in the Santa Clara River (Commerce Center bridge and the Long Canyon bridge); modification of 39,792 lf of on-site tributary drainages; conversion of 47,195 lf of tributary drainages to buried storm drains; a total of 67,537 lf of bank stabilization in tributary drainages (30,068 lf on the West Bank and 37,469 lf on the East Bank); and construction of three bridges and 13 culvert road crossings in tributary drainages. The revised project design would preserve approximately 155,074 lf of on-site drainages, which is 64 percent of the total 242,049 lf of jurisdictional drainages on the project site.

Based on the preliminary jurisdictional determination that was included in the Final EIS/EIR, the spatial distribution of the 47.9 acres of permanent impacts to waters of the United States associated with the revised project design would be 5.8 acres in the main-stem of the Santa Clara River, 2.1 acres in Potrero Canyon, 5.2 acres in Long Canyon, 4.7 acres in Lion Canyon, 0.2 acre in San Martinez Grande Canyon, 0.2 acre in Salt Creek, 4.7 acres in Chiquito Canyon and 25 acres in unnamed drainages in the project area. The revised project design would avoid permanent impacts to approximately 612 acres of waters of the United States

(approximately 92% avoidance of the waters of the United States in the project area).

C. Purpose and Need for the Proposed Project:

1. The purpose of the proposed project under NEPA (and the objectives under CEQA) are as follows:

a. To implement an RMDP that achieves the following basic objectives of the Specific Plan. The basic objectives are:

Land Use Basic Objectives:

- Create a major new community with interrelated Villages that allows for residential, commercial and industrial development, while preserving significant natural resources, important landforms and open areas.
- Avoid leapfrog development and accommodate projected regional growth in a location which is adjacent to existing and planned infrastructure, urban services, transportation corridors, and major employment centers.
- Cluster development within the site to preserve regionally significant natural resource areas, sensitive habitat, and major landforms.
- Provide development and transitional land use patterns which do not conflict with surrounding communities and land uses.
- Arrange land uses to reduce vehicle miles traveled and energy consumption.
- Provide a complementary and supportive array of land uses which will enable development of a community with homes, shopping, employment, schools, recreation, cultural and worship facilities, public services, and open areas.
- Organize development into Villages to create a unique identity and sense of community for each.
- Design Villages where a variety of higher intensity residential and nonresidential land uses are located in proximity to each other and to major road corridors and transit stops.
- Establish land uses and development regulations that permit a wide range of housing densities, types, styles, prices, and tenancy (for sale and rental).
- Designate sites for needed public facilities such as schools, fire stations, libraries, water reclamation plant and parks.

- Allow for the development of community services and amenities by the public and private sectors, such as medical facilities, child care, colleges, worship facilities, cultural facilities, and commercial recreation.

- Create a physically safe environment by avoiding building on fault lines and avoiding or correcting other geologically unstable landforms; by constructing flood control infrastructure to protect urban areas; and by implementing a fuel modification program to protect against wildfire.

Economic Basic Objectives:

- Adopt development regulations which provide flexibility to respond to changing economic and market conditions over the life of Newhall Ranch.

- Provide a tax base to support public services.

- Adopt development regulations and guidelines which allow site, parking, and facility sharing and other innovations which reduce the costs of providing public services.

b. To develop and implement a practicable and feasible SCP that would permanently protect and manage a system of preserves designed to maximize the long-term persistence of the spineflower within the applicant's land holdings containing known spineflower populations, and to authorize the take of spineflower in areas located outside of designated preserves.

2. In terms of the proposed development project's need, the northern Los Angeles County region has experienced and continues to experience significant growth resulting in a high demand for housing and jobs, and the overall regional need for large-scale residential, nonresidential, and commercial development to accommodate approved and planned growth in the region. To facilitate the orderly accommodation of the high demand for housing and jobs, the Specific Plan was approved by the Los Angeles County Board of Supervisors on 27 May 2003. The County determined that build-out of the Specific Plan will foster regional economic development and job creation by providing approximately 21,000 homes, including affordable housing, and approximately 20,000 jobs. In addition, the County required the applicant to set aside significant open space areas for the benefit of its residents and the region. These areas are located in and adjacent to the Specific Plan area, and include the River Corridor Sensitive Ecological Area/Special Management Area (SEA/SMA) 23, High Country SMA/SEA 20, Salt Creek area, designated Open Areas, spineflower preserve areas, and oak resources. The County has further determined that the Specific Plan will provide a tax base to support public services and will provide approximately 20,000 jobs to the Santa Clarita Valley. By providing residential, commercial, mixed-use and nonresidential uses, and by setting aside significant open space acreage, the County has determined that implementation of the Specific Plan will facilitate a balanced development where residents may both live and work and where sensitive biological resources are conserved, managed, and protected in perpetuity.

II. DECISION

The LEDPA is Modified Alternative 3, as identified and evaluated in the Final Section 404(b)(1) Alternatives Analysis (**Appendix A**), which is similar to the Draft LEDPA in the Final EIS/EIR (June 2010). The LEDPA includes the following activities subject to regulation under section 404 of the CWA:

i. Discharges of fill material into waters of the United States, permanently impacting 47.9 acres of waters of the United States, including 5.1 acres of wetlands, associated with the construction of bank stabilization to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); drainage facilities such as storm drains or outlets and partially lined open channels; grade control structures; bridges and drainage crossings; building pads; and water quality control facilities (sedimentation control, flood control, debris, and water quality basins).

ii. Discharges of fill material into waters of the United States, temporarily impacting 35.3 acres of waters of the United States, including 11.8 acres of wetlands, for the construction of bank stabilization to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); utility crossings; activities associated with construction of a WRP adjacent to the Santa Clara River and required bank protection; water quality control facilities (sedimentation control, flood control, debris, and water quality basins); regular and ongoing maintenance activities for all flood, drainage, and water quality protection structures and facilities on the RMDP site; and temporary haul routes for grading equipment and geotechnical survey activities.

III. ALTERNATIVES CONSIDERED

As part of the preparation of the Draft EIS/EIR, initially the Corps and CDFG considered a wide range of on-site and off-site alternatives. The Draft EIS/EIR for the RMDP initially identified 23 alternative sites within the region that were considered potentially available. These sites were evaluated using initial screening criteria to determine whether they might have the potential to accommodate the proposed project. Twenty of the sites were eliminated from further analysis at this stage because (1) the site was too small to accommodate the development proposed; (2) site was not in the vicinity of Santa Clarita; (3) and the site was in an isolated location that cannot be connected with existing infrastructure, in consideration of cost, logistics and/or technology; and/or (4) the site was currently entitled for development and was actively being planned for development by the current owner or was already under construction. All but three of the 23 potential alternative sites were rejected from consideration based on the initial screening criteria. Temescal Ranch (Alternative Site A), the Newhall-Ventura Property (Alternative Site B), and Hathaway Ranch (Alternative Site C) were then carried forward for additional analysis. Based on the additional analysis discussed in the Draft and Final EIS/EIR, and the Draft and Final Section 404(b)(1) Alternatives Analysis, the three off-site alternatives were rejected from further consideration because they were found to not meet the purpose and need of the proposed project, did not meet the overall project purpose, and/or

are impracticable.

Based on comments received during the scoping process and coordination with several resource agencies, including the U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board (RWQCB), at various meetings during the planning process, the Corps and CDFG initially developed and evaluated numerous on-site project alternatives to avoid and minimize impacts to aquatic resources and spineflower areas in the project area (**Appendix B** – Response to Comments). Based on this evaluation, one on-site alternative, the Total Avoidance Alternative (also known as Alternative 8), was considered and rejected from further consideration in the EIS/EIR because it did not meet the overall project purpose. Implementation of Alternative 8 would facilitate a master-planned urban development within the project site, comprising 2,144.9 net developable acres of residential, commercial, and industrial uses and public facilities. Compared to Alternative 2, the development facilitated under this alternative would be reduced by approximately 25.1 percent. All 660.1 acres of waters of the United States within the project site, including all 276.9 acres of jurisdictional wetlands, would be avoided and preserved under this alternative. Although this alternative was eliminated from consideration under NEPA, the Corps further considered the practicability of this alternative in its Section 404(b)(1) Alternative Analysis. This alternative was rejected under NEPA and the Section 404(b)(1) Guidelines because it did not meet the overall project purpose for the proposed project.

Alternatives analyzed in the Draft EIS/EIR included the No Action/No Project alternative, the originally proposed project (Alternative 2) and Alternatives 3 through 7. Alternatives 3 through 7 all included specific project design features to avoid and minimize impacts to waters of the United States, including special aquatic sites, in the project area. In response to comments received on the Draft EIS/EIR and based on the assessment in the Draft Section 404(b)(1) Alternatives Analysis, the Final EIS/EIR analyzed eight alternatives: No Action/No Project (Alternative 1), the proposed project (Alternative 2), and six other "build" alternatives (Alternatives 3 through 7 and the Draft LEDPA (Modified Alternative 3). The alternatives are summarized below and discussed in detail in the EIS/EIR and the attached Final Section 404(b)(1) Alternatives Analysis.

No Action/No Project (Alternative 1): The No Action alternative would not include any new actions in the project area and, as a result, the existing agriculture and oil production in the project area would continue.

Applicant's Proposed Project (Alternative 2): Alternative 2 is the applicant's original proposed project and is described in detail in Section 3.0 of the Final EIS/EIR. Of the 660.1 acres of waters of the United States within the project area, this alternative would permanently fill 93.3 acres, or approximately 14.1 percent of waters of the United States on site. Of the 660.1 acres of waters of the United States, approximately 276.9 acres are jurisdictional wetlands and, under this alternative, approximately 20.5 acres of wetlands would be permanently filled. As a result, this alternative would avoid approximately 88.6% of the total wetland area on-site. In total, this alternative would result in temporary discharges of fill material into approximately 33.3 acres of waters of the United States, including 11.2 acres of wetlands, in the Santa Clara River and its tributaries. Waters of the United States temporarily affected by the project would be restored and revegetated after completion of construction in the area. With this alternative,

approximately 533.5 acres of waters of the United States would be completely avoided (approximately 80% of the jurisdictional areas).

Alternative 3: Under this alternative, the project design would be modified in several respects. Similar to Alternative 2, this alternative calls for the construction of two bridges across the Santa Clara River with associated bank stabilization: (1) the Commerce Center Driver Bridge (already approved by the Corps and CDFG in 1999), and (2) the Long Canyon Road Bridge. The two alternatives differ, however, in that Alternative 3 eliminates the proposed bridge at Potrero Canyon Road. Under Alternative 3, major tributary drainages would be regraded and realigned; but the channels would be wider than those proposed under Alternative 2. Under Alternative 3, the cismontane alkali marsh in lower Potrero Canyon would be avoided and preserved. This alternative would facilitate similar urban development within the Specific Plan site, including 20,433 residential units and 5.48 msf of commercial/ industrial/business park floor area. For a complete description of Alternative 3, including infrastructure proposed and urban development facilitated, please refer to Section 3.0 of the Final EIS/EIR. Of the 660.1 acres of waters of the United States on the project site, implementation of Alternative 3 would result in the permanent fill of 70 acres of waters of the United States (approximately 11% of the total site jurisdiction and 25 percent less acreage than Alternative 2), and would temporarily disturb an additional 37.6 acres (12.9 percent more acreage than Alternative 2). These temporary impacts would be associated with construction zones adjacent to project facilities, which would be restored and revegetated following completion of construction. In some instances temporary impacts would also result from restoration activities, *i.e.*, when such activities require earthwork to be conducted in jurisdictional areas (correction of existing incised channel banks, for example). The increase in temporary impacts to waters of the United States under this alternative is due to the implementation of modified channels (temporary impacts) in areas where the project would feature storm drains (permanent impacts). Alternative 3 would avoid 552.4 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, Alternative 3 would avoid all impacts to approximately 83 percent, compared to 80 percent avoidance for Alternative 2. Implementation of Alternative 3 would permanently disturb 9.2 acres of wetlands (55 percent reduction in impact acreage compared to Alternative 2), and would temporarily disturb 11.2 acres of wetlands (a similar impact compared to Alternative 2). The cismontane alkali marsh wetland in lower Potrero Canyon, which would be disturbed under Alternative 2, would be avoided and preserved under this alternative. In total, Alternative 3 would avoid approximately 93 percent of all wetlands on site, a 4 percent increase in wetland avoidance compared to Alternative 2.

Alternative 4: Under this alternative, the project design would be modified in several respects. Two bridges across the Santa Clara River and the associated bank stabilization would be constructed, including the Commerce Center Driver Bridge (already approved by the Corps and CDFG in 1999) and the Long Canyon Road Bridge. The proposed Potrero Canyon Road Bridge, however, would not be constructed under this alternative. Major tributary drainages would be regraded and realigned under this alternative. Under Alternative 4, the cismontane alkali marsh in lower Potrero Canyon would be avoided and preserved. This alternative would facilitate urban development within the project site, including 20,721 residential units and 5.48 msf of commercial/industrial/business park floor area. For a complete description of Alternative 4, including infrastructure proposed and urban development facilitated, please

refer to Section 3.0 of the Final EIS/EIR. Implementation of Alternative 4 would facilitate urban development in the project site, and would result in the placement of fill within waters of the United States. In total, this alternative would permanently fill 73.3 acres of waters of the United States (21.4 percent reduction compared to Alternative 2), and would temporarily disturb an additional 33.8 acres (approximate 1.5 percent increase compared to Alternative 2). Temporary impacts would be associated with construction zones adjacent to project facilities. Waters of the United States temporarily affected by the project would be restored and revegetated after completion of construction in the area. In some instances temporary impacts would also result from restoration activities, *i.e.*, when such activities require earthwork to be conducted in jurisdictional areas (correction of existing incised channel banks, for example). Alternative 4 would avoid 552.9 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, Alternative 4 would avoid approximately 83 percent, compared to only 80 percent avoidance for Alternative 2. Implementation of Alternative 4 would permanently disturb 9.4 acres of wetlands (55 percent reduction in acreage compared to Alternative 2) and would temporarily disturb 11.7 acres of wetlands (similar impact to Alternative 2). The cismontane alkali marsh wetland in lower Potrero Canyon, which would be disturbed under Alternative 2, would be avoided and preserved under this alternative. In total, Alternative 4 would avoid approximately 93 percent of all wetlands on site, a 4 percent increase in avoidance area compared to Alternative 2.

Alternative 5: Under this alternative, the project design would be modified in several respects. Three bridges across the Santa Clara River and the associated bank stabilization would be constructed, including the Commerce Center Driver Bridge (already approved by the Corps and CDFG in 1999) the Potrero Canyon Bridge, and the Long Canyon Road Bridge. Major tributary drainages would be regraded and realigned under this alternative, but would result in impact reductions in the Chiquito Canyon, San Martinez Grande Canyon, and Potrero Canyon drainages compared to Alternative 2. This alternative would facilitate urban development within the project site, including 20,196 residential units and 5.42 msf of commercial/ industrial/business park floor area. For a complete description of Alternative 5, including infrastructure proposed and urban development facilitated, please refer to Section 3.0 of the Final EIS/EIR. Implementation of Alternative 5 would facilitate urban development in the project site, and would result in the placement of fill within waters of the United States. In total, this alternative would permanently fill 72.4 acres of waters of the United States (approximately a 22.5 percent reduction in acreage compared to Alternative 2), and would temporarily disturb an additional 41.6 acres (24.9 percent increase compared to Alternative 2). Temporary impacts would be associated with construction zones adjacent to proposed project facilities. Waters of the United States temporarily affected under this alternative would be restored and revegetated after completion of construction in the area. In some instances temporary impacts would also result from restoration activities, *i.e.*, when such activities require earthwork to be conducted in jurisdictional areas (correction of existing incised channel banks, for example). The increase in temporarily impacts to waters is due the implementation of modified channels (temporary impacts) in areas where the proposal would feature storm drains (permanent impacts). Alternative 5 would avoid all impacts to 546 acres of waters of the United States within the project site (3 percent more acreage than Alternative 2). Of the total 660.1 acres of waters of the United States that occur on the site, Alternative 5 would avoid approximately 83 percent, compared to only 80 percent avoidance for Alternative 2. Implementation of Alternative 5 would permanently disturb 14.6 acres of wetlands (28.8

percent reduction in impact acreage compared to Alternative 2), and would temporarily disturb 13.5 acres of wetlands (20.5 percent increase in impact acreage compared to Alternative 2). The cismontane alkali marsh wetland in lower Potrero Canyon, which would be disturbed under Alternative 2, would be avoided and preserved under this alternative. Alternative 5 would avoid approximately 90 percent of all wetlands on site, a one percent increase in avoidance area compared to Alternative 2.

Alternative 6: Under this alternative, the project design would be modified in several respects. Two bridges across the Santa Clara River and associated bank stabilization would be constructed, including the proposed Potrero Canyon Road Bridge (extended span similar to Alternative 5) and the Long Canyon Road Bridge. The previously-approved Commerce Center Drive Bridge would not be constructed under this alternative. Major tributary drainages would be regraded and realigned under this alternative, but the channels would be wider than under Alternative 2, and the majority of proposed road crossings along the channels would be bridges as opposed to culverts. This alternative would facilitate urban development within the project site, including 19,787 residential units and 5.33 msf of commercial and industrial/business park floor area. For a complete description of Alternative 6, please refer to Section 3.0 of the Final EIS/EIR. Implementation of Alternative 6 would facilitate urban development in the project site, and would result in the placement of fill material within waters of the United States. In total, this alternative would permanently fill 60.7 acres of waters of the United States (35 percent reduction in acreage compared to Alternative 2), and would temporarily disturb an additional 33.9 acres (similar impact acreage when compared to Alternative 2). Temporary impacts would be associated with construction zones adjacent to project facilities. Waters of the United States temporarily affected by the project would be restored and revegetated after completion of construction in the area. In some instances temporary impacts would also result from restoration activities, *i.e.*, when such activities require earthwork to be conducted in jurisdictional areas (correction of existing incised channel banks, for example). Alternative 6 would avoid 565.4 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, Alternative 6 would avoid all impacts to approximately 85 percent of the waters of the United States in the project site (a 5 percent increase in avoidance acreage compared to Alternative 2). Implementation of Alternative 6 would permanently disturb 9.5 acres of wetlands (53.5 percent reduction in impact acreage compared to Alternative 2), and would temporarily disturb 12.0 acres of wetlands (7 percent increase in impact acreage when compared to Alternative 2). These impacts would result primarily from bridge construction along the Santa Clara River mainstem, but this alternative would also affect the cismontane alkali marsh wetland in middle Potrero Canyon. Under this alternative, elimination of the planned bridge across the river at Commerce Center Drive would reduce impacts to adjacent wetlands along the Santa Clara River and a spring complex in lower Middle Canyon. The cismontane alkali marsh wetland in lower Potrero Canyon, which would be disturbed under Alternative 2, would be avoided and preserved under this alternative. In total, Alternative 6 would avoid approximately 92 percent of all wetlands on the site, a 4 percent increase in avoidance area compared to Alternative 2.

Alternative 7: Under this alternative, the project design would be substantially modified in several areas. Only one bridge would be constructed across the Santa Clara River, including associated bank stabilization, which would be constructed for the proposed Long Canyon Road. With Alternative 7, the proposed Potrero Canyon Road Bridge and the previously

approved Commerce Center Drive Bridge would not be constructed. Under this alternative, major tributary drainages would not be regraded or realigned. In addition, the Middle Canyon and Magic Mountain Canyon drainages, which are proposed for conversion to buried storm drains under the proposed project (Alternative 2), would be avoided and preserved. This alternative would facilitate urban development within the project site, including 16,471 residential units and 3.76 msf of commercial/industrial/business park floor area. For a complete description of Alternative 7, including infrastructure proposed and urban development facilitated, please refer to Section 3.0 of the Final EIS/EIR. Implementation of Alternative 7 would facilitate urban development in the project site, and would result in the placement of fill material within waters of the United States. In total, this alternative would permanently fill 13.1 acres of waters of the United States (86 percent reduction in acreage compared to the proposed project), and would temporarily disturb 20.3 acres of waters of the United States (39 percent reduction in acreage compared to Alternative 2). Temporary impacts would be associated with construction zones adjacent to project facilities. Fill under this alternative would be greatly reduced compared to Alternative 2, because Alternative 7 would avoid all mapped 100-year floodplains (Santa Clara River and several major tributaries) within the project site. Waters of the United States temporarily disturbed would be restored and revegetated after completion of construction in the area. In some instances temporary impacts would also result from restoration activities, *i.e.*, when such activities require earthwork to be conducted in jurisdictional areas (correction of existing incised channel banks, for example). Alternative 7 would avoid all impacts to 626.7 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, Alternative 7 would avoid approximately 95 percent (15 percent increase in acreage avoided when compared to Alternative 2). Under Alternative 7, the Potrero Canyon and Long Canyon tributaries, which would be filled and reconstructed under Alternative 2, would be avoided except for bridge impacts. Further, the Middle Canyon and Magic Mountain Canyon tributaries, which would sustain substantial impacts under all other alternatives, would be avoided under Alternative 7. This alternative would also reduce impacts to the Santa Clara River mainstem by eliminating the planned bridges at Potrero Canyon Road and Commerce Center Drive. Implementation of Alternative 7 would also avoid all mapped 100-year floodplains within the project site, except where proposed facilities would intercept floodplains to meet design requirements (bridges and grade control structures). This alternative would permanently disturb 3.2 acres of wetlands (84.4 percent reduction in acreage compared to Alternative 2), and would temporarily disturb 9.0 acres of wetlands (20 percent reduction in acreage compared to Alternative 2). These impacts would occur primarily due to construction of one bridge across the Santa Clara River mainstem, at Long Canyon Road. Impacts to wetlands under this alternative would be reduced through the elimination of the two planned bridges across the Santa Clara River at Commerce Center Drive and Potrero Canyon Road, and through avoidance of nearly all wetlands in Potrero Canyon. In total, Alternative 7 would avoid any impact to approximately 96 percent of all wetlands on site, a seven percent increase in avoidance area when compared to Alternative 2.

Draft LEDPA (Modified Alternative 3): With this alternative the total development area would be reduced to approximately 2,587 acres with the proposed 20,885 residential units would be reduced by approximately 1,073 units to a total of 19,812 units, and the approved 5.55 msf of commercial uses would be reduced by 140,000 square feet. In general, the design of this alternative is similar to Alternative 3, however, there would be increased avoidance along the

Santa Clara River, reduced impacts to the Middle Canyon Spring complex, augmented spineflower preserve acreage and larger riparian corridors within the five major tributary drainages under this alternative.

Under this alternative, two of the three bridges crossing the Santa Clara River and the associated bank stabilization would be constructed (Commerce Center Drive Bridge and the Long Canyon Road Bridge). However, the Potrero Canyon Road Bridge would not be constructed, further reducing impacts to jurisdictional waters and wetlands in the Santa Clara River and lower Potrero Canyon. Two major tributary drainages (Long Canyon and Potrero Canyon) would be regraded and realigned under this alternative; however, the channels would be wider than those of Alternative 2. In the three other major tributary drainages (Lion Canyon, San Martinez Grande Canyon, and Chiquito Canyon), this alternative incorporates additional areas of preserved jurisdiction with limited channel grading to expand the drainage and adjacent riparian areas and realign their banks to accommodate adjoining infrastructure and development area. This alternative includes additional spineflower preserve acreage in the Potrero, San Martinez Grande, Grapevine Mesa, and Airport Mesa preserves, however, the SCP and the related California Endangered Species Act incidental take permit decision is primarily within the jurisdiction of CDFG. This alternative would increase the acreage within the preserves from 167 acres under Alternative 2 to approximately 227 acres. In addition, the acreage of occupied spineflower habitat protected would increase from 13.88 acres under Alternative 2 to 15.4 acres, while the area of impacted occupied habitat would be decreased from 6.36 acres to 4.85 acres. In addition, this alternative 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.

Modified Alternative 3 would provide approximately 621 fewer residential units than Alternative 3 and result in a 0.07 msf reduction in commercial square footage. Under this alternative, the avoidance of floodplain area for the 100-year return event would be increased by 12.8 acres, resulting in a 100-year floodplain area of approximately 1,297 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 on surface water hydrology and flood control under this alternative would be substantially similar to those of Alternative 2. This alternative 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, this alternative 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.

Because the originally proposed project and alternatives involve discharges of fill material into waters of the United States, the Corps is required to comply with USEPA's CWA section 404(b)(1) Guidelines promulgated at 40 C.F.R. Part 230. The Guidelines prohibit the Corps from issuing a permit unless it is the LEDPA, and where "practicable" is defined in terms of cost, logistics, and technology in light of the overall project purpose. In order to comply with the Guidelines, the Corps typically analyzes alternatives that reduce impacts to aquatic resources through alternative configurations, locations, construction methods, sizes, *etc*. The Guidelines provide that for actions subject to NEPA, the analysis of alternatives required for NEPA environmental documents will in most cases provide the information for the evaluation of alternatives under the Guidelines. On occasion, the NEPA document may not have

considered the alternatives in sufficient detail to respond to the requirements of the Guidelines, and, therefore, further information may be provided. Further, the Guidelines require an applicant for a Department of the Army permit to take all appropriate and practicable steps to first avoid and then minimize adverse impacts to aquatic resources, and then compensate for unavoidable adverse impacts remaining after all appropriate and practicable minimization has been undertaken.

The Final Section 404(b)(1) Alternatives Analysis draws on the analysis in the Final EIS/EIR and evaluates further avoidance and/or minimization of Corps jurisdiction based on the sequenced approach under the Guidelines and as a result of comments received on the Final EIS/EIR and Draft Section 404(b)(1) Alternatives Analysis. As part of the analysis, the Corps evaluated the practicability of the alternatives considered under NEPA as well as the practicability of further avoiding specific resource areas and reaches of tributaries in the project area. Specifically, additional analysis of potential avoidance and minimization of impacts to waters of the United States including wetlands was analyzed in the Santa Clara River for Potrero Canyon, San Martinez Grande, Long Canyon, Chiquito Canyon, Middle Canyon and a proposed utility corridor in the Santa Clara River. As part of this supplemental alternatives analysis, the Corps considered the practicability of avoiding all discharges of fill material in waters of the United States in the above tributaries as well as less damaging alternative designs that would further reduce permanent impacts to waters of the United States when compared to the proposed project as well as Modified Alternative 3.

During coordination with USEPA, an additional sub-alternative was developed to avoid impacts to approximately 7.4 acres of waters of the United States, including 3.5 acres of wetlands, in the middle reach of Potrero Canyon. With this alternative design, the majority of the manufactured open area would be relocated to upland areas immediately adjacent to the existing wetland areas in the middle reach of Potrero Canyon. With this sub-alternative, the total development area would be similar to Modified Alternative 3 (approximately 2,587 acres), but augmented infrastructure requirements would result in an increase of approximately $12,965 per net developable acre and a total of approximately $31 million of additional costs when compared to Modified Alternative 3.

As a result of coordination with USEPA, another sub-alternative was developed to avoid both the 7.4 acres of waters of the United States, including 3.5 acres of wetlands, in the middle reach of Potrero Canyon as well as 11.9 acres of waters of the United States in the upper reach of Potrero Canyon (total additional avoidance of approximately 19 acres of waters of the United States, including 3.5 acres of wetlands in Potrero Canyon). With this alternative design, the majority of the manufactured open area would be relocated to a narrow band of upland area immediately adjacent to the existing wetland and riparian corridor areas in the middle and upper reaches of Potrero Canyon. With this sub-alternative, development area would be reduced by approximately 17 acres (approximately 2,570 acres) when compared to the Modified Alternative 3 and, the combination of reduced development area and augmented infrastructure requirements would result in an increase of approximately $20,695 per net developable acre and a total of approximately $53 million of additional costs when compared to Modified Alternative 3.

During coordination with the RWQCB, an additional sub-alternative was developed to avoid temporary impacts to approximately 0.5 acre of waters of the United States in the middle reach

of San Martinez Grande Canyon. With this alternative design, a small development area would be relocated allowing proposed bank stabilization to be constructed entirely in upland areas and reducing temporary impacts to aquatic resources. With this sub-alternative, development area would be identical to Modified Alternative 3 and would result in a total of $1,005,000 of additional costs when compared to Modified Alternative 3.

IV. EVALUATION OF ALTERNATIVES

The direct, indirect/secondary, and cumulative impacts associated with the originally proposed project and the other alternatives are included in the Final EIS/EIR. The evaluation of alternatives assessed under NEPA and the Section 404(b)(1) Guidelines is summarized below:

Alternative 1: As documented in the attached Final EIS/EIR and Final Section 404(b)(1) Alternatives Analysis, the No Action/No Project Alterative would neither meet the purpose and need of the project nor any of the basic objectives of the Specific Plan and therefore, would not meet the overall project purpose. Therefore, the No Action/No Project alternative does not represent the LEDPA.

Alternative 2: Alternative 2 would permanently impact 93.3 acres, including 20.5 acres of wetlands. Alternative 2 meets the purpose and need of the project, as well as the overall project purpose and is considered practicable to construct in terms of cost, logistics and technology. However, Alternative 2 has greater permanent impacts to waters of the United States when compared to several other less damaging practicable alternatives and, therefore, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. As a result, this alternative does not represent the LEPDA.

Alternative 3: Alternative 3 would permanently impact 70 acres of waters of the United States, including 9.2 acres of wetlands. This alternative is considered practicable to construct in terms of cost, logistics, and technology, and would achieve the overall project purpose by providing a master-planned community that meets the basic objectives of the Specific Plan, including approximately 20,433 residential units and 5.48 msf of commercial/industrial/ business park floor area. Although Alternative 3 would reduce permanent impacts to waters of the United States when compared to Alternative 2, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. In addition, Alternative 3 could result in other potentially significant adverse impacts to spineflower individuals and habitat. Therefore, this alternative does not represent the LEDPA.

Alternative 4: Alternative 4 would permanently fill 73.3 acres of waters of the United States (21.4 percent reduction compared to Alternative 2), and would temporarily disturb an additional 33.8 acres (approximate 1.5 percent increase compared to Alternative 2). Including residential, commercial and industrial development, Alternative 4 would result in approximately 2,712 acres of total development area (of the 2,712 acres approximately 2,329.6 acres would be residential development area). Alternative 4 would increase the cost of the proposed project by approximately 1.0% and is considered practicable in light of cost, logistics, and technology (total development cost of approximately $2,878,781,000, which yields a cost of $1,061,458 per net developable acre). In addition, Alternative 4 would provide a master-planned community that meets the basic objectives of the Specific Plan and, therefore, would also meet the overall project purpose. Although Alternative 4 has

reduced impacts to waters of the United States when compared to Alternative 2, the Corps has identified other practicable alternatives that have reduced impacts to waters of the United States and, therefore, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. As a result, this alternative does not represent the LEDPA.

Alternative 5: Implementation of Alternative 5 would result in the placement of fill within waters of the United States. In total, this alternative would permanently fill 72.4 acres of waters of the United States (22.5 percent reduction in acreage compared to Alternative 2), and would temporarily disturb an additional 41.6 acres (24.9 percent increase compared to the Alternative 2). Including residential, commercial and industrial development, Alternative 5 would result in approximately 2,621.9 acres of total development area (of the 2,621.9 acres approximately 2,232 acres would be residential development area). With a total of 2,621.9 net developable acres, Alternative 5 would result in a total development cost of approximately $2,894,539,000. This yields a cost of $1,103,985 per net developable acre. Alternative 5 would increase the cost per net developable acre by approximately 5.0% and would be marginally practicable in light of cost, logistics and technology. In addition, Alternative 5 would provide a master-planned community that meets the basic objectives of the Specific Plan and, therefore, would also meet the overall project purpose. Although Alternative 5 has reduced impacts to waters of the United States when compared to Alternative 2, the Corps has identified other practicable alternatives that have reduced impacts to waters of the United States and, therefore, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. As a result, this alternative does not represent the LEDPA.

Alternative 6: Implementation of Alternative 6 would facilitate urban development in the project site, and would result in the placement of fill within waters of the United States. In total, this alternative would permanently fill 60.7 acres of waters of the United States (35 percent reduction in acreage compared to Alternative 2), and would temporarily disturb an additional 33.9 acres (similar to impact acreage when compared to Alternative 2). Alternative 6 would facilitate urban development within the project site, but less than Alternative 2. However, because this alternative would not include the bridge across the Santa Clara River at Commerce Center Drive, a substantial portion of the development reduction would occur in the easternmost section of the project site. The configuration of developable space under Alternative 6 would result in a substantial reduction in development in one section of the project area and, as a result, preclude the construction of a coherent village in the eastern section of the project area. Alternative 6 would yield a total of 2,310.7 net developable acres at a total development cost of approximately $2,757,365,000, which yields a substantial increase in the development cost of $1,193,303 per net developable acre (approximately a 13.4 percent increase compared to Alternative 2). In consideration of the relatively high cost for the proposed project, a 13.4% increase in cost per net developable acre is not considered practicable. Furthermore, although Alternative 6 would have reduced impacts to waters of the United States when compared to Alternative 2, the Corps has identified other practicable alternatives that have further reduced impacts to waters of the United States and, therefore, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. As a result, this alternative does not represent the LEDPA.

Alternative 7: Implementation of Alternative 7 would facilitate urban development in the project site, and would result in the placement of fill within waters of the United States. In total, this alternative would permanently fill 13.1 acres of waters of the United States (86 percent reduction in acreage compared to Alternative 2), and would temporarily disturb an additional 20.3 acres (39 percent reduction in acreage compared to Alternative 2). In addition, Alternative 7 would avoid all mapped 100-year floodplains (Santa Clara River and several major tributaries) within the project site. Implementation of Alternative 7 would facilitate a master-planned urban development within the project site, comprising approximately 1,596 net developable acres of residential, commercial, and industrial uses and public facilities. Compared to Alternative 2, the development facilitated under this alternative would be reduced by 44.3 percent. In addition, Alternative 7 would facilitate the development of 1,352.4 acres of residential uses, a reduction of approximately 45.0 percent when compared to Alternative 2. Even after incorporating feasible increases in density, Alternative 7 would allow the construction of 16,471 dwelling units, a reduction of 21 percent compared to Alternative 2. Because the number of dwelling units available under Alternative 7 would be reduced substantially (more than 20 percent compared to the number approved in the Specific Plan), Alternative 7 would fail to achieve the basic objectives of the Specific Plan for residential uses. Alternative 7 would facilitate the development of approximately 125.4 acres of commercial uses, a reduction of approximately 51 percent compared to Alternative 2. With feasible increases in density, such as vertical construction, this acreage would support only 3.76 msf of commercial floor space, a substantial reduction of 32 percent when compared to Alternative 2. Because the commercial floor space available under Alternative 7 would substantially reduce (more than thirty percent) the floor space that would result from build-out of the Specific Plan, Alternative 7 would fail to achieve the basic objectives of the Specific Plan for commercial uses. Alternative 7 would yield 1,596 net developable acres at a development cost of approximately $2,538,137,000, which yields a substantial increase in the development cost of $1,590,311 per net developable acre (approximately a 51.2 percent increase compared to Alternative 2). Based on the above information, Alternative 7 would not meet the overall project purpose and is not considered practicable in light of the substantial increase in cost per net developable acre. As a result, Alternative 7 does not represent the LEDPA.

Alternative 8 (Total Avoidance Alternative): Implementation of Alternative 8 would facilitate a master-planned urban development within the project site, comprising approximately 2,145 net developable acres of residential, commercial, and industrial uses and public facilities. Compared to the proposed project, the development facilitated under this alternative would be reduced by 25.1 percent. Due to this substantial reduction, Alternative 8 would not meet the basic objective with regard to net developable acreage. Of the 2,145 acres of total development area, approximately 1,831.7 acres would be residential development area. Alternative 8 would facilitate urban development within the project site, but less than Alternative 2 (12 percent reduction in dwelling units as compared to Alternative 2). In addition, a substantial portion of the development reduction would occur in the easternmost portion of the project site. The configuration of developable space under Alternative 8 would preclude the construction of a coherent village in this location. For this reason, Alternative 8 would fail to achieve the basic objectives of the Specific Plan for villages. Alternative 8 would yield a total of approximately 2,145 net developable acres at a total development cost of approximately $2,890,933,000, which yields a substantial increase

in the development cost of $1,347,817 per net developable acre (28.1 percent increase compared to Alternative 2). Based on the above information, Alternative 8 would not meet the overall project purpose and is not considered practicable in light of the substantial increase in cost per net developable acre. As a result, Alternative 8 does not represent the LEDPA.

Sub-Alternatives: As part of the Final Section 404(b)(1) alternatives analysis, the Corps evaluated the practicability of avoiding specific resource areas and reaches of tributaries in the project area. As documented in the attached Final 404(b)(1) Alternatives Analysis, with the exception of two sub-alternatives in Potrero Canyon and one sub-alternative in San Martinez Grande Canyon, all other sub-alternatives in the Santa Clara River (for a proposed utility corridor), Chiquito Canyon, Long Canyon, San Martinez Grande Canyon, Middle Canyon and Potrero Canyon that would augment avoidance and minimization of impacts to waters of the United States would not meet the overall project purpose and/or were not practicable in light of a substantial increase in cost.

An additional sub-alternative was developed to avoid impacts to approximately 7.4 acres of waters of the United States, including 3.5 acres of wetlands, in the middle reach of Potrero Canyon by relocating the majority of the manufactured open area to upland areas immediately adjacent to the existing wetland areas. When the comparison is limited to the proposed development area in Potrero Canyon, the cost per net developable acre would increase by approximately $30,429, or approximately 10% when compared to Alternative 2; however, in the context of the entire project area, the cost per net developable acre would increase by approximately 5.4% when compared to Alternative 2 (increased cost of $56,464 per net developable acre when compared to Alternative 2). Furthermore, although this sub-alternative would have reduced impacts to waters of the United States when compared to Alternative 2, the Corps has identified another practicable alternative that would further reduce impacts to waters of the United States in Potrero Canyon and, therefore, further avoidance and minimization of impacts to waters of the United States can be practicably achieved. As a result, this sub-alternative was not included in the LEDPA.

As a result of coordination with USEPA, another sub-alternative was developed to avoid both the 7.4 acres of waters of the United States, including 3.5 acres of wetlands, in the middle reach of Potrero Canyon as well as 11.9 acres of waters of the United States in the upper reach of Potrero Canyon (total additional avoidance of approximately 19 acres of waters of the United States, including 3.5 acres of wetlands). With this alternative design, the majority of the manufactured open area would be relocated to a narrow band of upland area immediately adjacent to the existing wetland and riparian corridor areas in the middle and upper reaches of Potrero Canyon. With this sub-alternative, development area would be reduced by approximately 294 acres when compared to Alternative 2 and would result in an increase in cost of approximately $60,079 per net developable acre, resulting in a total cost of approximately $1,111,800 per net developable acre. With the alternative design for San Martinez Grande Canyon, a small development area would be relocated allowing proposed bank stabilization to be constructed entirely in upland areas and reducing temporary impacts to aquatic resources. With this sub-alternative, development area would be identical to the Modified Alternative 3 and would result in a total of $1,005,000 of additional costs. With the additional avoidance of 0.5 acre in San Martinez Grande and Potrero Canyon, in the context of the entire project the cost per net developable acre would

be $1,112,097, with an increase of approximately 5.7% when compared to Alternative 2. In light of the limited reduction in the net developable acreage combined with the increase in cost per net developable acre, the above alternative designs for Potrero Canyon and San Martinez Grande are considered practicable. Therefore, the above alternative design, when combined with the Modified Alternative 3, represents the LEDPA.

Modified Alternative 3 (Draft and Final LEDPA): With the Draft LEDPA design, this alternative would permanently fill approximately 66.3 acres of waters of the United States (29 percent reduction in acreage compared to Alternative 2), and would temporarily disturb 32.2 acres (3 percent decrease in acreage compared to Alternative 2). With the additional avoidance of approximately 19 acres in Potrero Canyon, including 3.5 acres of wetlands, and the avoidance of 0.5 acres of temporary impacts in San Martinez Grande, this alternative would result in reduced placement of fill material within waters of the United States. In total, this alternative would permanently fill 47.9 acres of waters of the United States (48 percent reduction in acreage compared to Alternative 2), and would temporarily disturb 35.2 acres (2 percent increase in acreage compared to Alternative 2). Of the total 660.1 acres of waters of the United States that occur on the site, this alternative would avoid all impacts to approximately 87 percent (576.9 acres), compared to 80 percent avoidance under Alternative 2. Implementation of this alternative would permanently disturb 5.1 acres of wetlands (approximately an 80 percent reduction in impact acreage compared to Alternative 2), and would temporarily disturb 11.8 acres of wetlands. Under this alternative, there would be 5.8 acres of permanent impact and 15.7 acres of temporary impact to waters of the United States in the main stem of the Santa Clara River. For all the tributaries in the project area, this alternative would result in approximately 42.1 acres of permanent impact and 19.6 acres of temporary impact in waters of the United States. In addition, this alternative would avoid the lower mesic meadow (cismontane alkali marsh) wetland and the majority of the wetland in the middle reach as well as the upper reach of Potrero Canyon, providing substantially reduced impacts to wetlands in both the Santa Clara River and the tributary drainages. In total, this alternative would avoid permanent impacts to approximately 98 percent of all wetlands on site.

In light of the relatively small reduction in the net developable acreage (approximately 17 acres resulting in a total of 2,570 acres) combined with the 2% increase in cost per net developable acre resulting in a total increase in cost per net developable acre of approximately 5.7 percent, the above less damaging sub-alternatives in Potrero and San Martinez Grande, when combined with Modified Alternative 3, would met the overall project purpose by providing a master-planned community that meets the basic objectives of the Specific Plan and is considered practicable in consideration of cost, logistics and technology.

Consideration of Cost: To determine if further avoidance and minimization of impacts to waters of the United States would be practicable in light of cost logistics and technology, the Corps utilized the Technical Report by Developers Research to establish the cost typical of similar development projects in southern California. When compared to Alternative 2, the increased cost of approximately 5.7% associated with the Modified Alternative 3, including increased avoidance and minimization of impacts in Potrero and San Martinez Grande, would result in a cost per net developable acre of approximately $1,112,097 (an increase of

approximately $60,079 per net developable acre when compared to Alternative 2). With an overall increase in cost of approximately 5.7 percent, the Modified Alternative 3, including the avoidance of 19.3 acres of waters of the United States in Potrero and San Martinez Grande, would represent the most expensive development project when compared to all the other development projects identified in the Technical Report by Developers Research. As stated in the preamble to the Section 404(b)(1) Guidelines at 45 FR 85343, "under the 404(b)(1) Guidelines if an alternative is unreasonably expensive to the applicant the alternative is not considered to be practicable." For the purposes of this analysis, once an alternative exceeds a cost of $1,097,298 per net developable (highest documented cost for any development project in the Developer Research Technical Report), it is clearly very close to the threshold where an alternative would be considered unreasonably expensive to the applicant.

As a component of the Corps' independent review of the cost information and analysis that is utilized to support the applicant-prepared Section 404(b)(1) Alternatives Analysis, the cost information in the above study was reviewed by the Corps' Cost Engineering Section. The purpose of the technical review was to ensure the cost estimates were consistently applied to each alternative and that the estimates were consistent with standard industry estimates for infrastructure associated with development projects. Based on the Cost Engineering Section memorandum dated 1 June 2011, the majority of the cost estimates utilized in the applicant-prepared Section 404(b)(1) Alternatives Analysis are reasonable and consistent with standard industry estimates for infrastructure associated with residential development projects.

Cost estimates in the Developer Research report provided an average cost per net developable acre for similar development projects as approximately $673,114, with a median cost of approximately $707,784. Considering all the development projects in the report, the cost per net developable acre ranges from a low of $493,889 to a high of $928,504 (with a relatively small 139-acre development project in Riverside County exhibiting a cost of $1,097,298 per net developable acre). In considering the practicability of less damaging alternatives compared to Alternative 2, the Corps did not utilize the estimated average or the median cost for development, but instead considered numerous alternatives that exceeded the average and median cost per net developable acre by over $400,000. Based on the above information, the cost per net developable acre for the Modified Alternative 3, combined with the additional avoidance of impacts to 19.3 acres of waters of the United States in Potrero and San Martinez Grande, would exceed the average and median cost per net developable acre by approximately $431,253 and $396,583, respectively. In addition, Modified Alternative 3, when combined with the additional avoidance in Potrero and San Martinez Grande, would exceed the cost per net developable acre for the most expensive project in the Developers Research Technical Report by approximately $14,799. Because Modified Alternative 3, when combined with the above additional avoidance, represents the most expensive development project in terms of cost per net developable acre, the Corps determined that further avoidance and minimization of impacts to waters of the United States, including wetlands, would be unreasonably expensive to the applicant and, therefore, would not be practicable.

Conclusion: Modified Alternative 3, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, would reduce total developable acreage by 10.3 percent compared to Alternative 2. Specifically, the residential development acreage is reduced by approximately 9.5 percent, and, with feasible increases in density, the corresponding unit count for this alternative is reduced by approximately 5

percent (1,073 units). Commercial acreage is reduced by approximately 14 percent (35.6 acres), but, with feasible increases in density, commercial square footage is reduced by only 3 percent (140,000 square feet). Acreage for public facilities acreage is reduced by 4 percent (6 acres), while open space acreage increases by approximately 290 acres compared to Alternative 2. There are no disproportionate impacts that threaten the viability of any of the proposed villages. Therefore, this alternative, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, would allow for a master-planned development consistent with the basic objectives of the Specific Plan. Modified Alternative 3 would preserve approximately 155,074 lf of on-site drainages, which is 64 percent of the total 242,049 lf of jurisdictional drainages on the project site. With the proposed residential, commercial and industrial development, Modified Alternative 3, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, would result in approximately 2,570 acres of total development area (of the 2,570 acres approximately 2,180.6 acres would be residential development area). Total development costs would be $2,857,977,754, compared to $3,013,189,367 for Alternative 2, resulting in a cost per net developable acre increase of approximately 5.7 percent ($1,112,097) when compared to Alternative 2. Based on the above information, Modified Alternative 3, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, would meet the overall project purpose and is considered practicable. In addition, Modified Alternative 3, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, would also include additional spineflower preserve areas, including a total of seven preserves consisting of 227 acres, further reducing impacts to this sensitive plant species. As a result, this alternative would not result in other significant adverse impacts to spineflower individuals or habitat and, therefore the Corps has made a determination that Modified Alternative 3, with the inclusion of additional avoidance and minimization of permanent impacts to approximately 19 acres of waters of the United States in Potrero Canyon and 0.5 acre of temporary impacts in San Martinez Grande, represents the LEDPA. With the above additional avoidance and minimization measures, the LEDPA would result in permanent impacts to 47.9 acres, including 5.1 acres of wetlands, and 35.3 acres of temporary impact to waters of the United States in the project area.

V. IDENTIFICATION OF THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The Environmentally Preferable Alternative would consist of that alternative which most closely fulfills the national environmental policy found in Section 101 of the NEPA. Essentially, it is the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. Absent any consideration of the ability of alternatives to achieve the overall purpose of the proposed project, I find that due to avoidance of temporary and permanent impacts to aquatic and upland resources associated with discharging fill material in waters of the United States the No Action/No Project Alternative (Alternative 1) would be the Environmentally Preferable Alternative.

The reason for selecting the Final LEDPA over the No Action/No Project Alternative (Alternative 1) is based on the ability to achieve the overall project purpose of completing the Newhall Ranch RMDP. While it would be less environmentally damaging than the LEDPA (no

impacts to waters of the United States, or other significant adverse impacts in adjacent upland areas), the No Action/No Project Alternative would not meet the basic objectives of the Specific Plan, and, as a result, this alternative does not meet the stated purpose and need or the overall project purpose.

VI. MEASURES TO AVOID AND MINIMIZE ENVIRONMENTAL HARM

To avoid and minimize direct and indirect/secondary impacts to water quality during the proposed construction activities, the project design for the LEDPA would include preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP itself would include erosion and sediment control BMPs to reduce or eliminate the discharge of sediment and other potential construction-related pollutants. The SWPPP must also contain a Construction Site Monitoring Program that identifies monitoring and sampling requirements during construction. Preliminary analysis indicates that the LEDPA would most likely be categorized as a Risk Level 2. BMPs and monitoring required by the Construction General Permit would be incorporated into the project design to comply with the Risk Level 2 requirements, as described in Attachment D of the Construction General Permit. If final design analysis indicates that the LEDPA would fall under Risk Level 3, the additional Level 3 permit requirements would be implemented as necessary.

Pursuant to NPDES requirements, Best Management Practices (BMPs) would be implemented at the project site under the LEDPA to avoid and minimize direct and indirect/secondary impacts to water quality in waters of the United States. These BMPs include the following water quality control facilities: (1) water quality basins; (2) debris basins, located just upstream of the interface between developed and undeveloped areas, primarily to trap debris coming from the upper watersheds; (3) detention basins, which are typically sized to capture the predicted runoff volume and retain the water volume for a period of time (usually 24 to 48 hours); (4) catch basin inserts or screens/filters installed in existing or new storm drains to capture pollutants in the stormwater runoff; (5) bioretention, such as vegetated grassy swales, that provide water quality benefits and convey storm water runoff; and (6) solids separator units or in-line structures that reduce or manipulate runoff velocities such that particulate matter falls out of suspension and settles in a collection chamber. With the implementation of the above measures, impacts to water quality would be substantially reduced, avoiding and minimizing direct and indirect/secondary impacts to water quality in the project area.

To further minimize less than significant direct and indirect/secondary impacts to water quality, the Low Impact Development (LID) project design for the LEDPA has been modified. LID project design features will be selected and sized to retain the volume of stormwater produced from a 0.75 inch storm event to reduce the percentage of Effective Impervious Area (EIA) to five percent or less of the total project area within the Newhall Ranch Specific Plan. Runoff from all EIA will be treated with effective treatment control measures that are selected to address pollutants of concern and are sized to capture and treat 80 percent of the average annual runoff. Compliance with the LID Performance Standard will be evaluated by the RWQCB for each phase of the project (Villages) within the RMDP as part of the Tier 2 evaluation process. Each Tier 2 project must demonstrate that the LID Performance Standard is achieved cumulatively considering the retention volume provided by the current project phase and all previous project phases within the RMDP area. In addition, it is important to note that

the RWQCB has separate authorities and obligations under the CWA and the State of California's Porter-Cologne Water Quality Control Act to ensure that State water quality standards are met and beneficial uses supported. The State of California via the RWQCB will require that State water quality standards, which may go beyond the section 404(b)(1) standards stated below, are met.

The current LID Performance Standard will be implemented for institutional, commercial, multi-family residential, recreation and park land use parcels using retention or biofiltration BMPs on-site to the extent feasible. Based on an assessment of feasibility, one of three BMP strategies would be applied. In areas where infiltration is feasible for all of the runoff produced from the 0.75 inch design storm volume, bioretention (without an underdrain, permeable pavement, infiltration galleries, infiltration basins or trenches, or an equivalent infiltration BMP) would be utilized. In areas where infiltration is allowable but low infiltration rates or deep fills are present, bioretention facilities (with an underdrain) would be used to retain a portion of the runoff from the design storm, then the remaining runoff would be biofiltered. In areas where infiltration is not technically feasible due to geotechnical hazards, high groundwater table or other factors identified as part of the Tier 2 evaluation process, biofiltration BMPs would be used to biofilter the runoff produced from the design storm in developed areas.

In addition, runoff from roofs, patios and walkways in single family residential parcels would be disconnected over landscape areas designed to retain the volume from the 0.75 inch storm event. Runoff from the remaining parcels that does not infiltrate would flow through the storm drain system to the regional/sub-regional infiltration/biofiltration facilities. Runoff from roadways would be retained or biofiltered in retention or biofiltration BMPs sized to capture the design storm volume or flow, as stipulated by USEPA's "Managing Wet Weather with Green Infrastructure/Green Streets.". Furthermore, no more than five percent of the total project area would be treated using conventional treatment methods that address the pollutants of concern, including the use of media filters to capture and treat 80% of the average annual runoff volume from the allowable EIA. Regional and sub-regional infiltration/ biofiltration facilities would also be implemented. These facilities would be designed to incorporate a biofilter in the bottom of the facility, which will allow for infiltration if feasible, with detention storage above the biofilter. These facilities would infiltrate or biofilter the design storm volume that has not been retained or biofiltered on the parcels in the area tributary to the facility and would provide extended detention treatment for the additional runoff volume required to provide 80% capture and treatment of the average annual runoff volume as stipulated in the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan treatment performance standard and the Newhall Ranch Specific Plan LID Performance Standard. The above LID performance standards would be revised if more stringent standards are adopted in a renewed Municipal Separate Storm Sewer System permit for Los Angeles County.

Wastewater generated by the build-out of the LEDPA would be treated in the proposed Newhall Ranch WRP. Treatment at the Newhall Ranch WRP would consist of screening, activated sludge secondary treatment with membrane bioreactors, nitrification/denitrification, ultraviolet disinfection, and partial reverse osmosis. The result of the above is that the effluent discharged to the Santa Clara River through the permitted Newhall Ranch WRP outfall would result in discharge equivalent to 100 mg/L chloride (or other applicable standard). The NPDES

Permit and WDRs for the Newhall Ranch WRP (Order No. R4-2007-0046, effective October 27, 2007 (Los Angeles RWQCB, 2007)) include effluent limitations that are protective of surface receiving water quality and designated beneficial uses. Treated effluent from the WRP would be used to supply distribution of recycled water throughout the proposed development area in the form of irrigation of landscaping and other approved use.

To confirm full and complete compliance with the chloride TMDL, the first two phases of the development would include interim chloride reduction treatment at the Valencia WRP. This project design feature involves chloride treatment of the effluent amount originating from Newhall Ranch (up to 6,000 units) at the Valencia WRP during the operation period of the 2002 Interconnection Agreement. The result of the above is that the effluent originating from Newhall Ranch that is discharged to the Santa Clara River through the permitted Valencia WRP outfall would be equivalent to 100 mg/L chloride (or other applicable standard). The NPDES Permit and WDRs for the Newhall Ranch WRP (Order No. R4-2007-0046, effective October 27, 2007 (Los Angeles RWQCB, 2007)) include effluent limitations that are protective of surface receiving water quality and designated beneficial uses. During the first two phases of the development, treated effluent from the Valencia WRP would be used to supply distribution of recycled water throughout the proposed development area in the form of irrigation of landscaping and other approved uses.

To compensate for unavoidable permanent impacts to 47.9 acres, including 5.1 acres of wetlands, and temporary impacts to 35.3 acres of waters of the United States, including 11.8 acres of wetlands, the LEDPA would implement a variety of on-site compensatory mitigation measures. In total, the compensatory mitigation would include the establishment, rehabilitation and enhancement of 114.04 acres of waters of the United States, including 35.2 acres of wetlands, in both the Santa Clara River and tributary drainages. The 114.04 acres include only waters of the United States and excludes non-jurisdictional riparian habitat and other buffer areas associated with CDFG mitigation requirements. As a standard measure to minimize impacts to waters of the United States, the 35.3 acres of temporary impact areas would be restored to pre-project contours and revegetated as stipulated in Corps and CDFG approved mitigation and monitoring plans. The required monitoring for the restored temporary impact areas would utilize the Hybrid Assessment of Riparian Condition (HARC) methodology to document adequate restoration of the physical and biological functions and services in the temporary impact areas.

With the LEDPA project design, approximately 612.2 acres of waters of the United States, including 271.8 acres of wetlands, would be avoided and protected in perpetuity by a conservation easement or restrictive covenant. To compensate for permanent impacts to waters of the United States, large areas in the Santa Clara River floodplain that are currently utilized for agriculture would be restored to active floodplain, resulting in an increase in the acreage of waters of the United States, including wetlands, as well as augmented functions and services. In addition, to further minimize and mitigate for less than significant impacts to floodplain areas, a restrictive covenant for floodplain protection would be recorded on approximately 119 acres, consisting of approximately 89 acres of waters of the United States and 30 acres of adjacent floodplain area in the Santa Clara River immediately downstream of the project area. Furthermore, to maintain existing functions and services in the preserved and compensatory mitigation jurisdictional features and adjacent upland areas shown on Figure 12 of the Newhall Ranch Project Description dated August 11, 2011, no new drilling, mining,

exploring and operating, storing in, and removing of oil, minerals, natural gas and other hydrocarbons would occur through the surface of the above areas or the upper 500 feet of the subsurface and no new or additional surface entry associated with the above activities would occur at the surface. In addition, suitable erosion control best management practices (BMPs) would be installed between any existing oil wells and waters of the United States and the BMPs would be required to be maintained in good working condition until the existing wells were abandoned and remediated. Establishment, rehabilitation and enhancement activities in Salt Creek, Potrero Canyon and other tributary drainages would also result in a net increase in the acreage of waters of the United States, including wetlands, with similar augmented functions and services. Lastly, major tributaries, such as Long Canyon, temporarily and/or permanently impacted as part of the LEDPA project design would either be replaced by created channels or structures that include establishment, rehabilitation and enhancement activities to accommodate vegetated waters, providing additional compensation for permanent impacts to waters of the United States.

Because the LEDPA would involve various construction phases in waters of the United States over at least a 20 year period, the compensatory mitigation would also be implemented in phases. To avoid and minimize temporal losses, the applicant would initiate establishment, enhancement and restoration activities in upper Salt Creek, lower Potrero Canyon and the Santa Clara River (Mayo Crossing area) prior to any permanent impacts in waters of the United States. The proposed compensatory mitigation includes a combination of rehabilitation and establishment in and adjacent to existing streams and wetland areas as well as establishment in recreated channels. In this initial phase, approximately 19.3 acres of compensatory mitigation would be implemented in lower Potrero Canyon contiguous with the lower mesic meadow, 19.7 acres of enhancement in the upper Salt Creek watershed and 15.9 acres in the Santa Clara River (conversion of agricultural fields), for a total of 54.9 acres of available mitigation area prior to any permanent impacts in waters of the United States. Concurrent with construction activities in waters of the United States associated with the various phases of the proposed development, additional compensatory mitigation capacity would be available including approximately 9.8 acres in Chiquito Canyon, 6.8 acres in San Martinez Grande, 5.24 acres in Long Canyon, 14 acres in Potrero Canyon, 2.1 acres in Lion Canyon, 18.5 acres in middle and lower Salt Creek and 2.7 acres of river bed expansion areas in the Santa Clara River (conversion of agricultural fields), ensuring no net loss of functions and services in the project area. Based on the above information, the total available compensatory mitigation for waters of the United States in the project area would be approximately 114.04 acres. The above compensatory mitigation areas would be distributed between rehabilitation, enhancement and establishment in natural stream channels and wetlands (108.78 acres) and reconstructed stream channels (5.24 acres). The required monitoring for the compensatory mitigation areas would utilize the Hybrid Assessment of Riparian Condition (HARC) methodology to calculate HARC-AW (Area-Weighted) units to document adequate restoration of the functions and services in all the compensatory mitigation areas.

With the proposed compensatory mitigation schedule, 54.9 acres of compensatory mitigation would be required prior to any permanent impacts to waters of the United States. With the construction of the first proposed village (Landmark Village), there would be approximately 4 acres of permanent impact to waters of the United States and 2.7 acres of additional mitigation area. As a result, with the completion of the first phase a total of approximately 57.6 acres of

compensatory mitigation would be initiated with only 4 acres of permanent impact to jurisdictional areas. With the second proposed village (Mission Village), there would be approximately 19.9 acres of additional permanent impact to waters of the United States and 20.6 acres of additional mitigation area. As a result, with the completion of the second phase a total of approximately 78.2 acres of compensatory mitigation would be initiated with 23.9 acres of permanent impact to jurisdictional areas. With the construction of the third proposed phase (WRP/Utility), there would be approximately 2.6 acres of additional permanent impact to waters of the United States. As a result, with the completion of the third phase a total of approximately 78.2 acres of compensatory mitigation would be initiated with only 26.5 acres of permanent impact to jurisdictional areas. With the construction of the fourth phase (third village area - Homestead Village South), there would be approximately 7.4 acres of permanent impact to waters of the United States and 5.24 acres of additional compensatory mitigation. As a result, with the completion of the fourth phase a total of approximately 83.44 acres of compensatory mitigation would be initiated with only 33.9 acres of permanent impact to jurisdictional areas. With the construction of the fifth phase (fourth village area - Homestead Village North), there would be approximately 12.0 acres of permanent impact to waters of the United States and 16.6 acres of additional compensatory mitigation. As a result, with the completion of the fifth phase a total of approximately 100.04 acres of compensatory mitigation would be initiated with 45.9 acres of permanent impact to jurisdictional areas. The final phase of the proposed project would be Potrero Village, which would result in 2 acres of impact to waters of the United States with 14 acres of potential compensatory mitigation. With the completion of the final phase of the currently proposed project a total of approximately 114.04 acres of compensatory mitigation would be initiated with 47.9 acres of permanent impact to jurisdictional areas. Appropriate legal restrictions would be placed on both the preservation and compensatory mitigation sites to ensure long-term protection and maintenance for these aquatic/riparian resources as well as no net loss of functions and services. For additional information regarding the proposed compensatory mitigation program, please reference the Final Mitigation Plan in Appendix A.

The majority of the mitigation measures to avoid and minimize direct and indirect/secondary impacts to the environment are summarized in the Executive Summary of the EIS/EIR and discussed in detail for each resource/issue impact in Section 4 of the EIS/EIR. It is recognized that Los Angeles County and CDFG as the local and state agencies with continuing program and responsibility over the entire project throughout its useful life, will implement, maintain, and monitor the full suite of mitigation measures identified in the December 2010 certified EIR for the project. Mitigation measures the USACE has determined enforceable and subject to our continuing program responsibility are included in this Record of Decision (ROD) (see VII.B(10) below).

VII. DETERMINATIONS AND FINDINGS

A. **Status of Other Authorizations and Legal Requirements**:

1. Water Quality Certification: Before proffering a permit authorizing the LEDPA, the applicant will need to obtain a 401 Certification.

2. Compliance with Section 106 of the National Historic Preservation Act (NHPA): On

behalf of the Corps, a consultant contacted the Native American Heritage Commission (NAHC) on 17 June 2004, to request information about traditional cultural properties, such as cemeteries and sacred places, in the proposed project area. According to NAHC's 24 June 2004 written response, their record search of the Sacred Lands file failed to indicate the presence of Native American cultural resources in the immediate project area. On 13 July 2004, the consultant, on behalf of the Corps, sent written correspondence to individuals identified on the NAHC's list of Native American tribes and individuals interested in consulting on development projects, to determine whether any of them had information about traditional cultural properties within the proposed project area. The Corps did not receive any responses to these initial letters. However, the Corps forwarded copies of the draft historic properties treatment plan and the draft Programmatic Agreement to the above Native American representatives for review and comment on 23 June 2010. In addition, in letters dated 25 October 2010 all the above Native American representatives were invited to sign the Final Programmatic Agreement as a concurring party. In response to the Corps' letter dated 25 October 2010, the Fernandeno Tataviam Band of Mission Indians signed the Final Programmatic Agreement as a concurring party on 9 November 2010.

Considering all available information, it is expected that two cultural resources listed or eligible for listing on the National Register of Historic Places would be adversely affected by the currently proposed project. On 7 July 2005, the Corps forwarded a letter to the State Historic Preservation Officer (SHPO) to initiate consultation for adverse effects to two sites and provided additional information regarding the presence and impacts to cultural resources in the project area. On 17 August 2005 SHPO responded to the Corps' initial letter and requested additional information. The Corps forwarded a second letter to SHPO on 15 July 2009 providing the requested additional information to support the original determination and responding to questions raised in the 17 August 2005 letter. With the submission of the additional information to SHPO, a Draft Programmatic Agreement was forwarded SHPO, the Advisory Council on Historic Preservation and several other interested parties, including Native American representatives, on 23 June 2010. Comments were received via E-mail from SHPO on 15 September 2010. On 22 September 2010, the Corps received a letter from the Advisory Council on Historic Preservation indicating that, based on the information provided they did not believe their participation in the consultation to resolve adverse effects was needed. The signed Programmatic Agreement was forwarded to SHPO on 23 September 2010 and SHPO returned the signed document to the Corps on 29 September 2010. Several of the concurring parties signed the Programmatic Agreement by 15 November 2010, which included the permittee, the Fernandeno Tataviam Band of Mission Indians and the California Department of Transportation. In addition, The Newhall Land and Farming Company has finalized a separate agreement with the Fernandeno Tataviam Band of Mission Indians to address any sensitive cultural resources discovered during construction and to monitor construction activities during the currently proposed project. As a result, with the completion of the above Programmatic Agreement, the Corps made a final determination that this permit decision would be in full compliance with the requirements of Section 106 of the NHPA (**Appendix C**).

3. Compliance with the federal Endangered Species Act (ESA): As discussed in Section 4.5 of the Final EIS/EIR and in the Final Section 404(b)(1) Alternatives Analysis, there is nesting or breeding habitat and high quality foraging habitat for several federally listed species in the

project area as well as designated critical habitat for several endangered species. Based on the above information, the Corps determined the project may affect several federally listed endangered species, including least Bell's vireo (*Vireo bellii pusillus*), unarmored threespine stickleback (*Gasterosteus aculeatus* ssp. *williamsoni*), arroyo toad (*Bufo californicus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California red-legged frog (*Rana aurora draytonii*), California condor (*Gymnogyps californianus*), and coastal California gnatcatcher (*Polioptila californica californica*), known to utilize habitat in the vicinity of the proposed project. The Corps has also determined the proposed project may affect designated critical habitat for the above species. In addition, the Corps has determined the proposed project may affect vernal pool fairy shrimp (*Branchinecta lynchi*) and Riverside fairy shrimp (*Streptocephalus wootoni*), but is not likely to adversely affect these two species. On 26 February 2008 the Corps initiated formal consultation under Section 7 of the ESA with the U.S. Fish and Wildlife Service (USFWS). As part of the formal consultation package, the Corps provided the required biological assessment to describe impacts to the above endangered and threatened species as well as their designated critical habitat. In their letter dated 12 November 2008, the USFWS requested additional information for some of the above species and concurred with the Corps' determination that the proposed project is not likely to adversely affect vernal pool fairy shrimp and Riverside fairy shrimp. In a letter dated 24 July 2009, the USFWS indicated that they had received sufficient information to prepare a biological opinion (Log Number 8-8-09-F-44). The USFWS completed a Final Biological Opinion for the Corps' proposed federal action on 6 June 2011, which concluded that the above effects would not jeopardize the continued existence of the above endangered species and would not adversely modified any designated critical habitat (**Appendix D**).

4. Compliance with Section 176(c) of the Clean Air Act: The requested USACE permit to authorize discharges of fill material in waters of the United States has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. Appendix 7.0 to the Final EIS/EIR, which included a draft general conformity determination, was published on 19 Jun 2010 for a 30-day review. On 10 August 2010, the South Coast Air Quality Management District provided a letter that confirmed that the Newhall Ranch RMDP was included in the 2007 South Coast SIP and that the 2007 South Coast SIP satisfies the individual elements for SIP revisions that may be relied upon for conformity determinations, as set forth in 40 C.F.R. 93.158(a)(5)(i)(B). In addition, the above 10 August 2010 letter stated that the Draft General Conformity Determination conforms to federal conformity regulations and was conducted in accordance with the requirements of 40 C.F.R. parts 6, 51, and 93. The draft general conformity determination is for the Federal action associated with the applicant's currently proposed project, including all emissions resulting from construction activities in waters of the United States as well as those associated with temporary staging, storage, and access needed to complete the in-water activities. Other indirect construction emissions, such as development in upland areas, and any later indirect emissions from operations of any of the facilities expected to be constructed are outside the USACE's continuing program responsibility and cannot be practicably controlled by the USACE, and were therefore not included in the analysis.

The USACE believes there is adequate allowance in the emissions budgets under the EPA-approved SIP and the 2007 Air Quality Management Plan to accommodate the total of direct

and indirect NOx emissions under the Federal action (as evaluated in Appendix 7.0 in the Final EIS/EIR). Based on the above information, USACE has completed a final air quality conformity analysis that determines that the project meets the conformity requirements pursuant to Section 176(c)(1) of the Clean Air Act, as amended (**Appendix E**).

B. Section 404(b)(1) Compliance: Detailed preliminary discussion of compliance with the Section 404(b)(1) Guidelines was provided in Appendix 1.0 of the Final EIS/EIR. The Final Section 404(b)(1) Alternatives Analysis is provided as Appendix A to this ROD. In summary, the applicant's originally proposed project (identified and evaluated as Alternative 2 in the EIS/EIR), which would permanently impact 93.3 acres of waters of the United states, is not the LEDPA because additional avoidance and minimization of impacts to waters of the United States was determined to be practicable. Based on the Final Section 404(b)(1) Alternatives Analysis, Modified Alternative 3, which would permanently impact 47.9 acres of waters of the United States is the LEDPA and is reflected in the applicant's revised project description. All of the appropriate and practicable conditions set forth in the EIS/EIR to minimize pollution or adverse effects to the affected aquatic ecosystem will be included as part of the Federal action or will be required by special conditions of the SIP (see (10) below). Our determination of compliance was based on the following findings:

(1) The project applicant has demonstrated that there are no available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharge into waters of the U.S.

(2) The discharge will not violate state water quality standards.

(3) The discharge will not violate toxic effluent standards.

(4) The discharge will not jeopardize endangered or threatened species or their critical habitat.

(5) The discharge will not violate standards set by the Department of Commerce to protect marine sanctuaries.

(6) The proposed discharge material will meet testing exclusion criteria because the material is not a carrier of contaminants.

(7) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and special aquatic sites.

(8) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to diversity, productivity, and stability of the aquatic ecosystem, such as the loss of fish or wildlife habitat, or loss of the capacity of wetland to assimilate nutrients, purify water or reduce wave energy.

(9) The discharge will not contribute to significant degradation of waters of the U.S. through adverse impacts to recreational, aesthetic, and economic values.

(10) All appropriate and practicable steps (40 C.F.R. §§ 230.70-77) will be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem. Toward this end, the following special conditions are being included in the SIP being proffered for this project: See Special Conditions listed below.

(11) The discharge complies with the 404(b)(1) guidelines pursuant to 40 C.F.R. Part 230.12.

Special Conditions:

1. The permittee shall preserve and protect in perpetuity 612.2 acres of waters of the United States, including 271.8 acres of wetlands consistent with the Mitigation and Monitoring Plan for the Newhall Ranch Resource Management and Development Project, Santa Clarita, California dated August 2011, and prepared by Dudek, Inc. (Mitigation Plan). The permittee shall protect the 612.2 acres with a conservation easement (CE) or restrictive covenant (RC) in accordance with Special Condition 7.

2. The permittee shall compensate for permanent impacts to 47.9 acres of waters of the United States, including 5.1 acres of wetlands, in the Santa Clara River and tributary drainages by rehabilitating, enhancing and establishing 114.04 acres of waters of the United States, including 35.2 acres of wetlands, that provide functions and services equal to those in the permanent impact areas, as stipulated in the Mitigation Plan. In addition, the permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection in accordance with Special Condition 29 over 119.25 acres, including 89 acres of waters of the United States in the Santa Clara River immediately downstream of the project area. To demonstrate a minimum of 1:1 replacement of functions and services, permanent impact and compensatory mitigation areas shall be compared annually using HARC-AW (Hybrid Assessment of Riparian Condition - Area Weighted) units and/or a similar Corps-approved method to assess functions and services as described in the above Mitigation Plan. For the purposes of this special condition, "implementation" of a mitigation site is defined as: a) preparation and approval by the Corps of a site specific mitigation plan; b) completion of site preparation; c) installation of temporary irrigation; d) seeding and/or planting of the mitigation site as stipulated in the Mitigation Plan; and e) as-built drawings of the mitigation grading, planting, and irrigation submitted to the Corps. The required compensatory mitigation shall include the following:

a. The permittee shall implement 54.9 acres of compensatory mitigation in the form of establishment, rehabilitation and enhancement in lower Potrero Canyon (19.3 acres), the Mayo Crossing site (15.9 acres) and the upper Salt Creek watershed (19.7 acres) prior to any permanent impacts to waters of the United States;

b. The permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection over 119.25 acres, including 89 acres of waters of the United States, in the Santa Clara River immediately downstream of the project area, as shown on Exhibit 1 attached hereto, and the permittee shall submit a copy of the recorded Declaration of Restrictive Covenant for Floodplain Protection to the Corps prior to any permanent impacts to waters of the United States;

c. The permittee shall implement a minimum of 59.14 acres of mitigation establishment, rehabilitation and enhancement consistent with the Mitigation Plan – Section 1.3.1 and Table 1, Development Project and Associated Mitigation. Compensatory mitigation for each phase of the project shall be implemented prior to or within two years of the impacts to waters of the United States for that phase of the project.

The permittee's responsibility to complete the required compensatory mitigation shall not be considered fulfilled until they have met or exceeded all performance criteria and have written verification of successful completion of the compensatory mitigation requirement from the Corps. If any compensatory mitigation site fails to meet the performance criteria, including acreage and functions and services, after ten years of monitoring, the permittee shall provide additional compensatory mitigation to offset the unmitigated permanent impacts, as required by the Corps to ensure a minimum 1:1 replacement of functions and services.

3. The permittee shall mitigate all temporary construction impacts affecting waters of the United States, by restoring pre-project contours and revegetating temporary impact areas with appropriate native vegetation after completion of construction in the area, in accordance with the Mitigation Plan. At a minimum, the acreage and functions and services of the revegetation area shall equal or exceed the acreage and functions and services of the temporary impact areas. Functions and services for temporary impact and revegetation areas shall be compared annually using HARC-AW units and/or a similar Corps-approved method to assess functions and services as described in the Mitigation Plan. The permittee's responsibility to complete the required revegetation as set forth in this Special Condition shall not be considered fulfilled until they have met or exceeded all performance criteria for a given site and have written verification of successful rehabilitation of the specific temporary impact area from the Corps. If a review area fails to meet the performance criteria, including no net loss of functions and services, after five years of monitoring, the permittee shall provide compensatory mitigation to offset the unmitigated temporary impacts as required by the Corps to ensure a minimum 1:1 replacement of functions and services.

4. Prior to initiation of the various phases of grading and project construction in waters of the United States, as described in Table 6 of the Mitigation Plan, the permittee shall provide written notification ("Construction Notification") to the Corps. The Construction Notification shall include the following:

a. An updated preliminary or approved jurisdictional delineation of waters of the United States and a site-specific mitigation plan as defined in Special Condition 5 and the Mitigation Plan. Based on the updated jurisdictional delineation, the acreages and locations of all impacts to waters of the United States, as well as the acreage and location of the recalculated compensatory mitigation shall be included in the required notification;

b. Written description for all the proposed structures (including RMDP Project Name), a description of the permanent and temporary impacts in waters of the United States, maps showing project location, impact acreages and drawings for all proposed structures, written documentation regarding compliance with all applicable special conditions of this permit and a description of all measures to avoid and minimize

impacts to waters of the United States;

c. Name and address of contractor performing the work, an onsite point of contact and the size and type of equipment that shall be performing the work;

d. For projects located in the Potrero Canyon watershed, a written description documenting compliance with the required design criteria for grade control structures (Special Condition 25) and road crossings (Special Condition 26);

e. Schedule for beginning and ending the project; and

f. Summary of all temporary and permanent impacts to waters of the United States that have been completed as part of previous project phases as well as a summary of all the initiated and completed compensatory mitigation areas for previous project phases.

Upon receipt of a Construction Notification, the Corps will determine whether the activity is authorized by this permit. If the activity is not authorized, the Corps will notify the permittee that they may request that the Corps modify the permit to include the activity as described in the procedures at 33 C.F.R. Part 325.7. If the activity is authorized by the permit, the Corps will determine if the avoidance and minimization measures in the Construction Notification and the site-specific compensatory mitigation plan comply with the terms and conditions of this permit. If the Corps determines that the proposed activity complies with the terms and conditions of the permit, a Notice to Proceed will be issued to the permittee. If the Corps determines that that all or part of the proposed activity does not comply with the terms and conditions of the permit, the Corps will issue a letter stating that the proposed activity does not meet the terms and conditions of the permit and, as a result, the proposed discharges of fill material in waters of the United States are not authorized. No work in waters of the United States shall occur until the permittee has received a Notice to Proceed from the Corps that states that the proposed discharges of fill material in waters of the United States comply with the terms and conditions of this permit.

5. As stipulated in the Mitigation Plan, the permittee shall prepare a site-specific mitigation plan subject to Corps approval as part of the required Construction Notification in Special Condition 4. Once the Corps has approved the site-specific mitigation plan, the permittee shall implement all the terms and conditions stipulated in the site-specific mitigation plan in full. The site specific mitigation plan shall include all the information specified in 33 C.F.R. Part 332.4(c)(2)-(14) including:

a. identify the goals (objectives) of the plan (see section 2.0 of the Mitigation Plan) and includes a description of the process of selecting the compensatory mitigation sites (see Section 3.0);

b. identify site protection instruments that are proposed for the compensatory mitigation areas (see section 2.1 of the Mitigation Plan ["All compensatory mitigation areas . . . would be protected in perpetuity by a conservation easement or covenant."]);

c. include existing baseline information (see sections 1.4 and 3.4 of the Mitigation Plan);

d. state that the HARC methodology is used to evaluate and characterize the functional quality of waters of the United States, including wetlands, and that HARC-AW scores were used to select mitigation sites and determine the appropriate acreage of the required compensatory mitigation (see sections 1.5.1 and 2.1 of the Mitigation Plan);

e. contain extensive mitigation plan information (see sections 2.0, 3.0, and 4.0 of the Mitigation Plan);
f. include a description of the maintenance activities to be conducted during the required monitoring (see section 5.0 of the Mitigation Plan);
g. set forth performance criteria (see sections 6.1 through 6.4 of the Mitigation Plan);
h. describe the compensatory mitigation monitoring requirements (see sections 6.5 through 6.7 of the Mitigation Plan);
i. contain a long-term management plan component (see section 9.0 of the Mitigation Plan - includes at a minimum trash removal; invasive, non-native plant species removal; repairs and maintenance to fencing and signage; and repair of damage to the mitigation area);
j. include an adaptive management plan (see section 8.5 of the Mitigation Plan);
k. describes the financial assurances required to ensure successful completion of the mitigation and maintenance and monitoring programs (see section 4.3 of the mitigation Plan);
l. provide all final specifications and topography-based layout grading, planting, and irrigation (with 0.5-foot contours). All wetland mitigation areas shall be graded to the same elevation as the adjacent existing wetlands and/or within approximately one foot of the groundwater table, and shall be left in a rough grade state with microtopographic relief (including channels) that mimics natural wetland topography, as directed by the Corps. Planting and irrigation shall not be installed until the Corps has approved the mitigation site grading. The permittee shall contact the Corps for verification of proper grading of the mitigation site a minimum of 15 days prior to the planned date of initiating planting;
m. require that all planting shall be installed in such a manner that mimics natural plant distribution (e.g., random distribution rather than uniform rows);
n. within 45 calendar days of complete installation for each mitigation site, require as-built drawings of the mitigation grading, planting, and irrigation infrastructure to the Corps;
o. require at the first anniversary of plant installation, all dead plants shall be replaced unless their function has been replaced by natural recruitment as verified by the Corps;
p. include a final implementation schedule that indicates when all wetland/waters impacts, as well as mitigation site grading, planting, and irrigation shall begin and end;
q. require a minimum of five years of maintenance, monitoring and attainment of performance criteria for all waters of the United States, including wetlands, mitigation areas;
r. include planting pallets (plant species, size, and number per acre) and seed mix (plant species and pounds per acre); and
s. require a wetland delineation to confirm that Corps jurisdictional wetlands have been successfully created prior to Corps final approval of the mitigation.

6. Prior to permanent impacts to waters of the United States for each phase of the authorized project, the permittee shall post financial assurance in an amount and form approved by the Corps Regulatory Division to ensure a high level of confidence that the compensatory mitigation projects will be successfully completed, in accordance with applicable performance criteria. Mitigation areas required in Special Condition 2a and 2c may be secured by separate financial assurances and approval of the financial assurances will be provided with the approval of the

Construction Notification for each phase of the project (Phases 1 through 6). The financial assurance may be in the form of a performance bond, escrow account, letter of credit or other appropriate instruments, subject the approval of the Corps. Our preferred form of a financial assurance is a letter of credit. For letters of credit, the credit must be issued by a federally insured financial institution rated investment grade or higher. The required financial assurance for some project phases may take the form of a letter of credit, escrow account or surety bond that is held by the CDFG, subject to the approval of the Corps Regulatory Division. For performance bonds, the corporate surety must appear on the Department of Treasury Circular 570, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies. For a current list of Treasury-authorized companies, write or call the Surety Bond Branch, Financial Management Services, Department of the Treasury, Washington DC 20227; (202) 874-6850 or at the following website: http://www.fms.treas.gov/c570/c570.html. The financial assurance shall be released only upon a determination by the Corps Regulatory Division that successful mitigation has been completed for the given phase of the project.

7. The permittee shall record conservation easements (CE) or restrictive covenants (RC) to protect the 612.2 acres of preserved waters of the United States and 114.04 acres of compensatory mitigation. The approximate boundaries and phasing of the CEs and RCs are shown in the attached Figure 12 and Table 10: LEDPA Conservation Land Dedication/Recordation Schedule, but the final boundaries and acreages to be protected by the CEs/RCs shall be determined by the Corps, in coordination with the California Department of Fish and Game (CDFG). If the permittee does not record the required CE or RC according to the schedule in Table 10, subsequent discharges of fill material in waters of the United States are not authorized until the required CE or RC for the previous phase is recorded. The CE or RC shall be in a form approved by the Corps' Regulatory Division, which shall run with the land, obligating the permittee, its successors and assigns to protect and maintain the preserved waters of the United States and compensatory mitigation areas. The CE must include a qualified third-party easement holder pursuant to California Civil Code 815.3 and Government Code section 65965. The permittee must provide monies in the form of an endowment (endowment amount to be determined by Property Analysis Record or similar methodology) for the purposes of fulfilling the third-party easement holder's responsibilities under the CE, including long-term maintenance activities described in the long-term management section of the Mitigation Plan and site-specific mitigation plan, and compliance inspections one or more times per year. The CE or RC shall preclude establishment of fuel modification zones, paved public trails, maintained public trails, drainage facilities, walls, maintenance access roads and/or future easements, except as provided in the Newhall Ranch Resource Management and Development Plan (RMDP) authorized by this permit. Further, to the extent practicable, any such facilities or trails outside the CE or RC shall be sited to minimize potential indirect impacts on the avoided, established, rehabilitated and enhanced wetland and non-wetland waters of the United States. The permittee shall receive written approval of the CE or RC from the Corps' Regulatory Division prior to each being executed and recorded.

8. During all construction activities in waters of the United States, the permittee shall clearly mark the limits of the workspace with silt fencing to ensure mechanized equipment does not enter the 576.9 acres of avoided waters of the United States, including adjacent wetland areas. Adverse impacts to waters of the United States beyond the Corps-approved construction footprint are not authorized. Such impacts could result in permit suspension and revocation,

administrative, civil or criminal penalties, and/or substantial, additional, compensatory mitigation requirements.

9. The permittee shall provide all on-site contractors, subcontractors, and forepersons a copy of this permit. The permittee shall ensure that all of the above personnel read, understand, agree to, and comply with all terms and conditions of the authorization. A copy of this authorization shall be included in all bid packages for the project and shall be available at the work site at all times during periods of work and must be presented upon request by any Corps personnel. The permittee shall provide the Corps written confirmation of compliance with this special condition prior to initiating construction activities in waters of the United States, including names, phone numbers, and addresses of all of the above personnel, including signatures indicating their understanding and agreement with this permit. As new personnel are brought onto the project during the construction phase, the permittee shall provide monthly written confirmation of compliance with this special condition to the Corps.

10. The permittee shall staff a qualified biologist on site during project grading and construction in the vicinity of waters of the United States to ensure compliance with all requirements of this permit. The qualified biologist shall document compliance with this permit. The permittee shall submit the biologist's name, address, telephone number, email address (if available), and work schedule on the project to the Corps a minimum of fifteen (15) days prior to the planned date of initiating impacts to waters of the United States authorized by this permit. The biologist/permittee shall report any non-compliance with the permit to the Corps Ventura field office (805-585-2148) within one day of its occurrence. The biologist/permittee shall submit a written report summarizing the non-compliance with the permit and any measures implemented to rectify the incident to the Corps Ventura field office within three days of the non-compliance.

11. The permittee shall ensure that all vehicle maintenance, staging, storage, and dispensing of fuel occurs in designated upland areas. The permittee shall ensure that these designated upland areas are located in such a manner as to prevent any runoff from entering waters of the United States.

12. No debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, from construction shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the United States. Therefore, the permittee shall employ all standard Best Management Practices to ensure that toxic materials, silt, debris, or excessive erosion do not enter waters of the United States during project construction. Upon completion of the activities authorized by this permit, any excess material or debris shall be removed from the work area and disposed of in an appropriate upland site.

13. The permittee shall install silt fence and fiber-fill barriers prior to grading to trap eroded sediments on-site and to divert runoff around disturbed soils. Silt fences and fiber-fills shall be placed along the tops and slopes of the access roads and at the limits of the construction corridor and project area, and any area that could pass sediment in the vicinity of any waters of the United States to prevent additional waters of the United States impacts and the spread of silt from the construction zone into adjacent waters of the United States.

14. The permittee shall discharge only clean fill materials suitable for the activities permitted herein.

15. Within 60 calendar days of completion of each phase of the authorized work in waters of the United States, the permittee shall submit to the Corps Regulatory Division a post-project implementation report providing the following information:

a. As-built construction drawings with an overlay of waters of the United States that were impacted;
b. Dated and labeled color photographs of waters of the United States that were permanently and temporarily impacted (including latitude and longitude coordinates); and
c. A summary of all project activities which documents that authorized impacts to waters of the United States were not exceeded, and demonstrated compliance with all the terms and conditions of the permit.

16. All correspondence and submittals shall reference the Corps project name and File Number (SPL-2003-01264-AOA), conspicuously on any transmittal letter and/or the first page/paragraph of the text, and on any graphics or photographs. All plans and photographs shall be labeled and dated. Failure to provide this information may cause the Corps to determine that the submittals are incomplete, not submitted by the due date, or non-existent, and therefore, not compliant with permit conditions.

17. Annual mitigation maintenance and monitoring reports shall be submitted to the Corps in April of each year, after the annual maintenance and monitoring has been performed. All required mitigation maintenance and monitoring reports shall be required for a minimum of 5 years for each mitigation area or as required until all performance criteria have been met. All annual mitigation and monitoring reports shall include all the information stipulated in the Mitigation Plan as well as the site specific mitigation plan.

18. Within 45 calendar days of complete implementation for each mitigation site, the permittee shall submit to the Corps Regulatory Division two copies of a memo indicating the following:

a. Date(s) all mitigation (grading, planting and irrigation infrastructure) was installed and monitoring was initiated;
b. Schedule for future mitigation monitoring, implementation and reporting pursuant to the Corps-approved Mitigation Plan and site-specific mitigation plan;
c. Color photographs taken at the mitigation site before and after grading, planting and placement of irrigation infrastructure; and
d. One copy of "as built" drawings for the mitigation site (all sheets must be signed, dated, to-scale, and no larger than 11 x 17 inches).

19. This permit does not authorize you to take an endangered species, in particular least Bell's vireo (*Vireo bellii pusillus*), unarmored threespine stickleback (*Gasterosteus aculeatus* ssp. *williamsoni*), arroyo toad (*Bufo californicus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), and coastal California gnatcatcher

(*Polioptila californica californica*) or adversely modify designated critical habitat for any of the above endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA). The enclosed U.S. Fish and Wildlife (USFWS) Biological Opinion (BO) No. 8-8-09-F-44 contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the BO. Your authorization under this Corps permit is conditional upon the permitttee's compliance with all of the mandatory terms and conditions associated with incidental take in the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute non-compliance with this permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

20. At the completion of construction for each phase of the project, education material, as approved by the Corps, regarding open space preservation, ESA and the Clean Water Act shall be developed to be distributed to all future homeowners. The permittee shall include in the Covenants, Codes, Restrictions and Easements for the development of the requirement that the homeowners association shall be responsible, in perpetuity, to ensure the information is available to all new homeowners. The above shall be completed prior to issuance of any occupancy.

21. The permittee shall comply with all the terms and conditions stipulated in the National Historic Preservation Act Section 106 Programmatic Agreement (PA) for the Newhall Ranch Resource Management and Development Plan dated 4 October 2010.

22. The permittee shall retain a qualified archaeologist to perform archaeological monitoring of the project site during earthmoving activities. The onsite archaeological monitoring activities shall be conducted by an archaeological monitor under the supervision of a person or persons meeting at a minimum the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61). The archaeologist should be onsite during earthmoving activities on a full-time basis.

23. Pursuant to 36 C.F.R. § 800.13, in the event of any discoveries during construction of either human remains, archaeological deposits, or any other type of historic property, the permittee shall notify the Corps Archeology staff within 24 hours (Mr. Steve Dibble at 213-452-3849, Ms. Amy Holmes at 213-452-3855, or Mr. John Killeen at 213-452-3861. The permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The permittee shall not resume construction in the area surrounding, i.e., immediately adjacent to, the potential cultural resources, until the Corps re-authorizes project construction, per 36 C.F.R. § 800.13.

24. The permittee shall bear the expense of treatment of all historic properties set forth in the treatment plan and PA. Such costs shall include, but not be limited to, pre-field planning, field work, post-field analysis, research, and interim, summary, and final report preparation (including draft and final versions) and costs associated with the curation of project documentation and all collections made from the historic properties. The permittee shall provide (10) bound hard copies and one electronic (PDF) copy of all draft and final reports to the Corps.

25. The permittee shall limit the total number of grade control structures in Potrero Canyon to a maximum of 60. The average height of the grade control structures shall not exceed 4 feet, with a maximum allowable height of 5 feet. The grade control structures shall be located to minimize impacts to or avoid localized aquatic vegetation or habitats, stabilize existing headcuts, and be sited in conjunction with road crossings. The preferred grade control design shall be a 3-foot-high step pool structure and constructed using ungrouted boulders. Ungrouted boulder step pools are the preferred method of stabilization however, in some locations specific site conditions could require an alternative design to provide adequate grade control. To deviate from the above grade control design criteria, the permittee shall prepare a detailed hydrologic justification and alternative design proposal for review and approval by the Corps as part of the required Construction Notification process in Special Condition 4. The permittee shall forward a copy of any Construction Notification that includes a deviation from the above grade control design criteria to the USEPA, Region 9 Wetlands Section (Attn: Chief, Wetlands Section).

26. All road crossings in Potrero Canyon shall be constructed using soft-bottom, clear span arch culverts. The culverts shall be designed to have natural channel substrate placed at the equilibrium slope. Grade control structures shall be located at the upstream and downstream boundaries of road crossings and the arches for all the road culverts shall be designed to allow wildlife passage along the creek corridor. To deviate from the above road crossing design criteria, the permittee shall prepare a detailed justification and alternative design proposal for review and approval by the Corps as part of the required Construction Notification process in Special Condition 4. The permittee shall forward a copy of any Construction Notification that includes a deviation from the above road crossing design criteria to the USEPA, Region 9 Wetlands Section (Attn: Chief, Wetlands Section).

27. To maintain existing functions and services in the preserved and compensatory mitigation areas shown in Figure 12 of the Final Newhall Ranch Project Description dated August 11, 2011 attached hereto, the permittee shall neither undertake any new drilling, mining, exploring and/or operating, storing in, and/or removing of oil, minerals, natural gas and other hydrocarbons through the surface or the upper 500 feet of the subsurface for such resources nor allow new or additional surface entry associated with the above activities. This special condition does not apply to maintenance and construction activities located in existing pipeline corridors, defined as a 25-foot-wide area on either side of an existing pipeline, entry and surface disturbance associated with remediation and well field closure or new pipelines that are directly drilled under the preserved and compensatory mitigation areas, where the entry and the exit points of the pipeline are located outside of the preserved and compensatory mitigation areas.

28. The permittee shall:

a. Ensure that the existing oil and gas well sites (RSF076, RSF090, RSF093, RSF119, RSF122 and RSF139) specified on Exhibit 2 attached hereto located in or adjacent to future Corps mitigation areas, are plugged and abandoned and surrounding areas remediated no later than October 15, 2028;

b. Within 180 days after the effective date of this Permit, install suitable erosion control best management practices (BMPs) between oil wells (RSF076, RSF090, RSF093,

RSF 119, RSF122 and RSF139) specified on Exhibit 2 and the waters of the United States and maintain such BMPs in good working condition until the wells are abandoned and remediated as described in section (a) above.

29. The permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection that prohibits any development within the restricted area that would increase the base flood elevation (as defined by the Federal Emergency Management Agency) above that existing at the time of recordation, whether within the restricted area or upstream or downstream of the restricted area. The Declaration of Restrictive Covenant for Floodplain Protection shall prohibit any development within the restricted area that would otherwise contribute to increased risk of downstream flooding, whether or not resulting from increased base flood elevation. For purposes of the Declaration of Restrictive covenant, the term "development" shall be defined to mean any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials, but excluding the following: agricultural activities, including farming, ranching, orchards and vineyards; installation of pipelines or utility lines of any kind; water diversions; outfall structures; or any activities associated with habitat restoration and enhancement.

30. In circumstances where construction and/or maintenance activities that include discharges of fill material in waters of the United States within the project site are transferred by the Permittee to other entities (sale of the Property as a whole is governed by the Corps' standard transfer procedures) and the Permittee intends to transfer permit authorization and its associated obligations to the transferee specifically related to subsequent construction and/or maintenance of that portion of the project that is transferred to other entities, the Permittee and the intended transferee shall submit a joint written notice to the Corps of the transfer. Permit responsibilities for the subsequent construction and/or maintenance activities in waters of the United States shall be transferred to the other entity in accordance with the procedures of this condition.

a. The notice shall indicate the precise total acreage, type, and location of permitted discharges of fill material into jurisdictional waters and the transferee's mitigation obligations, if any.

b. The notice shall contain an acknowledgment signed by the transferee that it accepts and will comply with the applicable terms and conditions of the permit as it pertains to the subsequent construction and/or maintenance of the constructed drainage improvements located within the transferred land.

c. Permit responsibilities shall be divided as follows:

i. The transferee shall be authorized to impact jurisdictional waters on the transferred land in accordance with the applicable terms, conditions, and special conditions of this permit;

ii. The transferee shall be responsible for complying with all the applicable terms and conditions of this permit as it pertains to the subsequent construction and/or maintenance of the constructed drainage improvements located within the transferred land. The Permittee shall remain solely responsible for implementing all other terms and conditions of this permit. The Permittee shall also remain solely responsible for implementing all terms, conditions, conservation measures

and mitigation requirements included in the referenced Biological Opinion (No. 8-8-09-F-44).

iii. The Permittee and each transferee shall be solely responsible for its own actions under this permit. The Permittee shall not be liable for a violation of a term or condition of the permit by the transferee and vice versa.

31. Within 60 days following written Corps approval of the project-specific mitigation plan for each phase of the authorized project, the permittee shall provide to this office GIS data (polygons only) depicting the boundaries of all compensatory mitigation sites, as authorized in the project-specific mitigation plan referenced above. All GIS data and associated metadata shall be provided on a digital medium (CD or DVD) or via file transfer protocol (FTP), preferably using the Environmental Systems Research Institute (ESRI) shapefile format. GIS data for mitigation sites shall conform to the data dictionary, as specified in the current Map and Drawing Standards for the Los Angeles District Regulatory Division, and shall include a text file of metadata, including datum, projection, and mapper contact information. Within 60 days following completion of compensatory mitigation construction activities, if any deviations have occurred from the approved project-specific mitigation plan, the permittee shall submit as-built GIS data (polygons only) accompanied by a narrative description listing and explaining each deviation.

C. Public Interest Review: I find that my decision to issue a permit for Modified Alternative 3 (LEDPA) for the Newhall Ranch RMDP project, as prescribed by regulations published in 33 C.F.R. Parts 320 to 332 and 40 C.F.R. Part 230, is not contrary to the public interest. While I considered all the public interest factors listed in 33 C.F.R. Part 320.4, the discussion that follows focuses on those factors relevant to this project. During the Draft EIS/EIR comment period, there was opposition to several aspects of Alternative 2. Specifically, several public citizens, environmental groups and agencies expressed concern about potentially significant impacts associated with water supply, general water quality, air quality, including global climate change, biological and aquatic resource impacts associated with Alternative 2. Based in part on some of the above comments, the applicant's originally proposed project (Alternative 2) was not selected as the LEDPA. In evaluating all comments, the USACE not only worked with the applicant and the resource agencies to identify alternative project designs, but also to develop appropriate mitigation measures to avoid and minimize project impacts (i.e., Modified Alternative 3 as identified and evaluated in the Final EIS/EIR and the Final Section 404(b)(1) Alternatives Analysis), as stated above.

As summarized in Section 4 and Section 5 in the Final EIS/EIR, under NEPA, the Federal action associated with the applicant's revised project description (LEDPA), with the inclusion of applicable mitigation measures, would not result in significant adverse effects to most of the public interest factors, including surface water hydrology, fluvial geomorphology, water resources, cultural resources, geology, parks, recreation and trails, hazards/public safety, socioeconomics/environmental justice, global climate change and traffic. In addition, even with the implementation of all mitigation mitigations, project-specific adverse effects would remain significant with regard to air quality, noise, agricultural resources, land use, visual resources and solid waste services. In many cases, these impacts would occur beyond the USACE's statutory authorities under section 404 of the CWA to require effective mitigation. However, they would still be subject to the County of Los Angeles and CDFG's authority, as

the local and state agencies with continuing program and responsibility over the project throughout its useful life.

One public interest factor that was referenced by many public comments was potentially significant adverse impacts to water supply, both for local groundwater and imported water resources. The EIS/EIR, Section 4.3, Water Resources, thoroughly evaluated the water supply sources associated with the originally proposed project and alternatives, including constraints to the availability and reliability of imported State Water Project (SWP) supplies. In addition, the Draft and Final EIS/EIR, Section 4.3, Water Resources, specifically, Subsection 4.3.4.2.2, and Topical Response 5: Water Litigation and Regulatory Action Update and Topical Response 9: State Water Project Supply Reliability, adequately disclosed the operational and regulatory constraints affecting SWP supply. The Draft and Final EIS/EIR, Section 4.3, also relied on supply estimates of SWP delivery reliability provided by the California Department of Water Resources (DWR). Specifically, the EIS/EIR assessed SWP delivery capability under current and future conditions, relying upon DWR computer modeling that simulated operations of the SWP and Central Valley Project (CVP), and utilized DWR's most-recently published estimates of SWP delivery reliability included in the draft 2009 DWR Delivery Reliability Report (See Section 4.3, pp. 4.3-25-4.3-28; and Appendix F4.3 [2009 DWR Delivery Reliability Report]). In addition, the Final EIS/EIR updated the discussion of constraints to the SWP system, including constraints imposed by the 2008 and 2009 Biological Opinions (see Section 4.3, pp. 4.3-28-4.3-34). The Final EIS/EIR concluded as follows: "Based on this updated information, CLWA has determined that its revised estimate of the water supply projections for all of the scenarios in the 2005 UWMP (*i.e.*, normal/average, dry, and multiple dry years), which incorporates the results of the draft DWR 2009 Delivery Reliability Report, and the additional sources of supply identified since issuance of the 2005 UWMP, represent a reasonable estimate of the available supplies for the CLWA service area. According to CLWA, the revised estimate shows that, for the demand projected in the 2005 UWMP, the water supply projections would be adequate for all normal and dry year scenarios through 2030. CLWA's revised estimate of water supply is reflected in the water supply/demand tables incorporated into this section of the EIS/EIR" (Final EIS/EIR, Section 4.3, pp. 4.3-34-4.3-35). Based on the above information, the Corps has determined that the information in the Draft and Final EIS/EIR documents shows that there is adequate water supply and the currently proposed project would not significantly affect local or regional water supplies.

Furthermore, the Specific Plan portion of the project site includes approval for construction of the Newhall Ranch WRP, which will generate recycled water; construction of the plant and recycled water system, and use of recycled water on site, will substantially reduce the demand for potable water supplies. The Newhall Ranch WRP will be built in stages as the currently proposed project is developed, and will ultimately be sized to treat up to 6.8 million gallons per day (mgd) of wastewater at build-out of the project. The NPDES Permit and WDRs for the Newhall Ranch WRP (Order No. R4-2007-0046, effective October 27, 2007 (Los Angeles RWQCB, 2007)) include effluent limitations that are protective of surface receiving water quality and designated beneficial uses. Newhall WRP effluent will comply with all requirements of Title 22 of the California Code of Regulations, which regulates recycled water, to facilitate recycling the maximum feasible amount of wastewater generated by the proposed development to meet a significant portion of the non-potable water demand of the residents in the project area. A corresponding recycled water distribution system also will be constructed

with capacity to convey the resulting recycled water throughout the development area for irrigation and other approved non-potable purposes.

The EIS/EIR also contains a thorough survey of scientific literature that addresses the effect of global climate change on California's water supplies (see Appendix 8.0 of the Draft EIS/EIR, and Appendix F8.0 of the Final EIS/EIR). The literature survey provided in the Draft EIS/EIR was updated prior to circulation of the Final EIS/EIR in order to ensure that it accounted for recent developments in the field. Appendix 8.0 of the Draft EIS/EIR also includes a technical memorandum, prepared by GSI Water Solutions, Inc., regarding the potential effects of climate change on groundwater supplies for the Newhall Ranch Specific Plan. GSI found that groundwater resources in the western portion of the Santa Clarita Valley are relatively unaffected by local fluctuations in rainfall; consequently, "if rainfall and groundwater recharge rates were to decline in the future because of climate change, these changes are likely to be fairly small." Finally, Section 4.3, Water Resources, of the Final EIS/EIR evaluated the ability of the existing and projected water supply to meet the water demands of the originally proposed project and alternatives, and determined that direct and indirect/secondary impacts to water supply and groundwater resources would not be significant.

The present state of air quality in Santa Clarita was discussed in Section 4.7, Air Quality, of the Final EIS/EIR. Relative to the NEPA baseline, significant and unavoidable (even with mitigation) adverse impacts would be expected to air quality (construction exceedances of air quality standards). The applicant has implemented numerous mitigation measures to reduce the above significant impacts associated with construction emissions, including implementation of more rigorous standards for construction equipment (MM AQ-2.1), but even with numerous and substantial mitigation measures, the impacts remain significant after mitigation. The EIS/EIR also explained that particulate matter can cause aggravation of chronic respiratory diseases such as asthma (Final EIS/EIR, p. 4.7-31). The EIS/EIR included mitigation measures to reduce the emissions of ozone precursors and particulate matter to the extent feasible (Final EIS/EIR, pp. 4.7-119 to 4.7-143). In conclusion, the EIS/EIR adequately disclosed and analyzed potential health-related effects of air pollution, including effects on individuals with asthma.

As discussed in the Final EIS/EIR, the areas proposed for development within the floodplain would be elevated above floodplain levels, thereby removing the development from flood hazards (see Final EIS/EIR, p. 4.1-2). Moreover, Executive Order 11988 states that modification or development in floodplains shall be avoided "wherever there is a practicable alternative." As determined by the Corps, the alternatives that would further reduce or eliminate floodplain modification (beyond the amount such modification has been already reduced by the LEDPA) have been determined to be impracticable (see Final Section 404(b)(1) Alternatives Analysis). Since the floodplain avoidance alternatives were determined to be impracticable, the proposed floodplain modifications are not contrary to the intent of Executive Order 11988. As part of the Final EIS/EIR, the Corps completed detailed evaluation of additional floodplain avoidance and specifically developed and assessed Alternative 7, which would avoid the mapped 100-year floodplain within the project site, except where bridges and grade control structures would intercept floodplain areas to meet design requirements. Implementation of Alternative 7 would facilitate a master-planned urban development within the project site, comprising 1,596 net developable acres of residential, commercial, and industrial uses and public facilities.

Compared to Alternative 2, the development facilitated under this alternative would be reduced by 44.3 percent. In addition, Alternative 7 would facilitate the development of 1,352.4 acres of residential uses, a reduction of approximately 45.0 percent when compared to Alternative 2. Even after incorporating feasible increases in density, Alternative 7 would allow the construction of 16,471 dwelling units, a reduction of 21 percent compared to Alternative 2. In addition, the Corps determined that Alternative 7 was impracticable because, compared to Alternative 2, the cost per net developable acre under Alternative 7 would be increased by approximately 51.2 percent. Because the residential component under Alternative 7 would be reduced substantially (more than 20 percent compared to Alternative 2) and the cost per net developable acre would be increased by approximately 51.2 percent, the Corps determined that Alternative 7 does not represent the LEDPA.

The LEDPA would avoid an additional 12.8 acres of floodplain impacts in the Santa Clara River by not authorizing construction of the Potrero Canyon Road Bridge and pulling back bank stabilization along sections of the Santa Clara River. Modified Alternative 3 (LEDPA) would include a net loss of approximately 110 acres of 100-year floodplain out of 1,408 acres of floodplain in 5.5 linear miles of the Santa Clara River in the project area (of the approximate 110 acres of developed floodplain area only approximately 5.8 acres are jurisdictional waters of the United States). To address potential downstream effects to floodplain areas, Sikand Engineering characterized the hydrology of the river in two technical reports that were completed in 2000. The Sikand reports estimated that the maximum extent of indirect/ secondary impacts to hydrology and associated floodplain areas were limited to a point about four miles downstream of the Specific Plan site in Ventura County. Sikand found that after a certain distance downstream of the Los Angeles County/Ventura County line, the predicted increases in peak flows in the Santa Clara River dissipates. This downstream distance varies by return frequency, with the change in the 2-year peak flow dissipating approximately 2.1 miles downstream and the change in the 100-year peak flow attenuating to pre-project conditions at approximately 3.2 miles downstream of the Los Angeles County/Ventura County line. Therefore, indirect/secondary effects to downstream floodplain areas would be less than significant. Furthermore, the applicant has already successfully processed Conditional Letters of Map Revision (CLOMR) applications for both the Landmark Village and Mission Village subdivision projects. Based on the CLOMR applications, neither subdivision would encroach upon a regulatory floodway, as that area is delineated on the effective Flood Insurance Rate Map (FIRM), nor cause any rise in basic flood levels in any such area. To further minimize and mitigate for less than significant impacts to floodplain areas, a restrictive covenant for floodplain protection would be recorded on approximately 119 acres, consisting of approximately 89 acres of waters of the United States and 30 acres of adjacent floodplain area in the Santa Clara River immediately downstream of the project area. Based on the above information, the LEDPA would avoid and minimize impacts to floodplain values to the maximum extent practicable and is consistent with the intent of Executive Order 11988.

The Final EIS/EIR determined (page 4.4-186) that the originally proposed project and alternatives would not result in significant water quality impacts after applying the required project design features (PDFs), Best Management Practices (BMPs), regulatory requirements, and identified mitigation measures. The water quality modeling provided by the EIS/EIR demonstrated that at a Specific Plan level of detail, compliance with water quality regulatory standards can feasibly be achieved after the implementation of the proposed mitigation

measures. The water quality model was not conceptual (see modeling details in Appendix B of Final EIS/EIR, Appendix F4.4), but did conservatively assume extended detention basins would be used as the baseline BMP and that these BMPs would achieve a 20 percent reduction of the flows to the basin. This modeling showed that this type of BMP would be protective of receiving water quality; thus, BMPs that achieve more volume reduction through infiltration and evapotranspiration will be more certain of reducing pollutant loads. The runoff model used to predict the average annual runoff volume for the impact analysis contained in the Final EIS/EIR is conservative, as it does not account for the Low Impact Development (LID) implementation that would be required as a condition of project approval for future tract maps (Tier 2). The originally proposed project and alternatives have committed to a variety of site design/LID practices and vegetated BMPs that would further reduce the predicted runoff volume, including bioretention areas, vegetated swales, filter strips, and extended detention basins. Infiltration trenches and dry wells also would be used to promote infiltration of treated flows (see Final EIS/EIR, p. 4.4-110). In addition, the originally proposed project and alternatives would incorporate site design/LID and treatment control BMPs to promote evapotranspiration and infiltration (where technically feasible) and reduce pollutant loads in stormwater discharges when compared to traditional site design practices and treatment BMPs. The use of recycled wastewater from the approved Newhall WRP will take precedence over harvest and use of stormwater runoff for irrigation and other approved uses in order to minimize the discharge of treated wastewater to the Santa Clara River from the WRP. Furthermore, it is anticipated that when subsequent water quality modeling is conducted in Tier 2 at a tract map level of detail (*i.e.*, when actual parcel size, location, and design details are known), and when project-specific BMP and LID project design features required by the Newhall Ranch Sub-Regional SWMP are included in the water quality model, project-related impacts to water quality will be reduced to a less-than-significant level as documented in the analysis results currently provided by the EIS/EIR.

To further minimize less than significant direct and indirect/secondary impacts to water quality, the Low Impact Development (LID) project design for the LEDPA has been modified. LID project design features will be selected and sized to retain the volume of stormwater produced from a 0.75 inch storm event to reduce the percentage of Effective Impervious Area (EIA) to five percent or less of the total project area within the Newhall Ranch Specific Plan. Runoff from all EIA will be treated with effective treatment control measures that are selected to address pollutants of concern and are sized to capture and treat 80 percent of the average annual runoff. Compliance with the LID Performance Standard will be evaluated by the RWQCB for each phase of the project (Villages) within the RMDP as part of the Tier 2 evaluation process. Each Tier 2 project must demonstrate that the LID Performance Standard is achieved cumulatively considering the retention volume provided by the current project phase and all previous project phases within the RMDP area. In addition, it is important to note that the RWQCB has separate authorities and obligations under the CWA and the State of California's Porter-Cologne Water Quality Control Act to ensure that State water quality standards are met and beneficial uses supported. The State of California via the RWQCB will require that State water quality standards, which may go beyond the section 404(b)(1) standards stated below, are met.

The current LID Performance Standard will be implemented for institutional, commercial, multi-family residential, recreation and park land use parcels using retention or biofiltration

BMPs on-site to the extent feasible. Based on an assessment of feasibility, one of three BMP strategies would be applied. In areas where infiltration is feasible for all of the runoff produced from the 0.75 inch design storm volume, bioretention (without an underdrain, permeable pavement, infiltration galleries, infiltration basins or trenches, or an equivalent infiltration BMP) would be utilized. In areas where infiltration is allowable but low infiltration rates or deep fills are present, bioretention facilities (with an underdrain) would be used to retain a portion of the runoff from the design storm, then the remaining runoff would be biofiltered. In areas where infiltration is not technically feasible due to geotechnical hazards, high groundwater table or other factors identified as part of the Tier 2 evaluation process, biofiltration BMPs would be used to biofilter the runoff produced from the design storm in developed areas.

In addition, runoff from roofs, patios and walkways in single family residential parcels would be disconnected over landscape areas designed to retain the volume from the 0.75 inch storm event. Runoff from the remaining parcels that does not infiltrate would flow through the storm drain system to the regional/sub-regional infiltration/biofiltration facilities. Runoff from roadways would be retained or biofiltered in retention or biofiltration BMPs sized to capture the design storm volume or flow, as stipulated by USEPA's "Managing Wet Weather with Green Infrastructure: Green Streets.". Furthermore, no more than five percent of the total project area would be treated using conventional treatment methods that address the pollutants of concern, including the use of media filters to capture and treat 80% of the average annual runoff volume from the allowable EIA. Regional and sub-regional infiltration/ biofiltration facilities would also be implemented. These facilities would be designed to incorporate a biofilter in the bottom of the facility, which will allow for infiltration if feasible, with detention storage above the biofilter. These facilities would infiltrate or biofilter the design storm volume that has not been retained or biofiltered on the parcels in the area tributary to the facility and would provide extended detention treatment for the additional runoff volume required to provide 80% capture and treatment of the average annual runoff volume as stipulated in the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan treatment performance standard and the Newhall Ranch Specific Plan LID Performance Standard. The above LID performance standards would be revised if more stringent standards are adopted in a renewed Municipal Separate Storm Sewer System permit for Los Angeles County.

In addition to the above project-specific significant and unavoidable impacts, the proposed project would also result in cumulatively significant impacts, as discussed in Section 6 of the Final EIS/EIR, with respect to air quality with the implementation of Modified Alternative 3 (note that all project-specific significant impacts are also cumulatively significant). As described in Sections 5 and 7 of the EIS/EIR, the project would provide substantial economic benefits, including construction related activities that would result in local spending by contractors on materials, equipment, food, entertainment and other miscellaneous purchases. In addition, Modified Alternative 3 would include mitigation measures that would reduce air quality impacts and associated health risks in the vicinity of the project area.

As evaluated in Section 4 of the EIS/EIR, numerous measures, many of which are innovative, are being required to avoid and minimize a broad array of direct and indirect/secondary impacts that are of interest to the public. While a few of the impacts would remain significant and unavoidable even with mitigation, there is a clear public interest locally, and at the state

and national levels, to move forward with the proposed discharges of fill material and construction activities in waters of the United States associated with the completion of the Newhall Ranch RMDP to address current and projected population growth and the associated need for additional housing in Los Angeles County. As discussed in Sections 1 and 4.19 of the EIS/EIR, the population in Los Angles County is expected to continue to increase over the next 20 years. The Newhall Ranch RMDP is a critical component in meeting the projected housing needs in Los Angeles County, although the currently proposed project will not satisfy all the expected increases in population (i.e., demand will continue to exceed capacity). In addition, the Newhall Ranch RMDP would include approximately 5.4 msf of commercial areas which would provide an estimated total of 20,000 jobs. Based on the above information, the currently proposed project would meet an important public need by providing additional housing opportunities, including affordable housing as well as providing a substantial number of additional jobs in northern Los Angeles County. When the extent and permanence of the expected benefits and detrimental effects of the proposed work and structures would have on the public and private uses to which the area is suited are considered, in light of the substantial mitigation measures in the Final EIS/EIR that would be implemented to avoid and minimize environmental impacts, the Corps has determined that issuance of a Department of the Army Permit with the above special conditions, as prescribed by regulations published in 33 C.F.R. Parts 320 to 330, and 40 C.F.R. Part 230, is not contrary to the public interest.

VIII. CONCLUSION

For the reasons outlined above, Modified Alternative 3, with the inclusion of additional avoidance and minimization measures in Potrero Canyon and San Martinez Grande, is the alternative that best meets the purpose and need of the project and will have the least impact on the human and natural environment, including waters of the United States. The Corps will ensure that the commitments outlined above will be implemented as part of the project design and construction.

Based upon a careful consideration of all the social, economic, and environmental evaluations contained in the Final EIS/EIR; the input received from other agencies, organizations, and the public; and the factors and project commitments outlined above, it is my decision to issue a Department of the Army permit authorizing discharges of fill material pursuant to section 404 of the CWA associated with the LEDPA.

DATED: 31 August 2011

R. Mark Toy
Colonel, US Army
District Commander

Appendix 2E

Waste Discharge Requirements and Clean Water Act Section 401 Water Quality Certification for the Newhall Ranch RMDP

Los Angeles Regional Water Quality Control Board

September 27, 2012

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

September 27, 2012

COMMUNITY
OCT - 4 2012
DEVELOPMENT

Matt Carpenter
Director, Environmental Resources
The Newhall Land and Farming Company
25124 Springfield Court, Suite 300
Valencia, CA 91355-1088

Dear Mr Carpenter,

ADOPTED WASTE DISCHARGE REQUIREMENTS AND CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION FOR THE NEWHALL LAND AND FARMING COMPANY RESOURCE MANAGEMENT AND DEVELOPMENT PLAN (File No. 11-168; US Army Corps of Engineers Permit No. 2003-01264-AOA).

On March 9, 2012, the Los Angeles Regional Water Quality Control Board (Regional Board) released tentative Waste Discharge Requirements and Clean Water Act Section 401 Water Quality Certification (WDRs) for the Newhall Land and Farming Company Resource Management and Development Plan (RMDP). Written comments were accepted until 5:00 p.m. on April 20, 2012. The Regional Board held public hearings on June 7, 2012, August 7, 2012 and September 14, 2012, and reviewed the tentative requirements, considered all the factors in the case, and, on September 14, 2012, adopted Order R4-2012-0139 (copy enclosed).

The final Order will only be sent to Newhall Land and Farming Company. However, the documents are available for the public on the Regional Board's website: www.waterboards.ca.gov/losangeles/.

The Newhall Land and Farming Company shall be liable civilly for any violations of this Order in accordance with the California Water Code. This Order does not eliminate Newhall Land and Farming Company's responsibility to comply with any other applicable laws, requirements and/or permits.

Should you have questions concerning this Order, please contact Valerie CarrilloZara, Lead, Section 401 Program, at (213) 576-6759.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer

cc: Aaron Allen, US Army Corps of Engineers
Dennis Bedford, California Department of Fish and Game
Nancy Woo, US Environmental Protection Agency

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER No. R4-2012-0139
CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION
AND WASTE DISCHARGE REQUIREMENTS (WDR) FOR:

NEWHALL LAND & FARMING COMPANY, PROPOSED RESOURCE MANAGEMENT AND DEVELOPMENT PLAN AND SPINEFLOWER CONSERVATION PLAN, SANTA CLARITA, LOS ANGELES COUNTY
(File No. 11-168)

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Attachments:

1. **Clean Water Act Section 404 Permit Final LEDPA Project Description**
2. **RMDP Maintenance Manual**
3. **Clean Water Act Section 404 Permit Mitigation Plan dated May 26, 2011**
4. **RMDP Biological Mitigation Measure (BIO 2)**
5. **Draft Surface Water Diversion Plan**

FINDINGS.

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board), finds the following.

A. REGULATORY AUTHORITY

1. The federal Clean Water Act requires that any applicant for a federal license or permit to conduct an activity that may result in discharges of pollutants to navigable waters of the United States provide the federal licensing agency with a certification, or a waiver of certification, from the state agency having jurisdiction over the navigable waters that the discharge will comply with applicable Clean Water Act and other applicable water quality requirements (water quality certification). Clean Water Act § 401, 33 U.S.C. §1341.

2. Persons seeking water quality certification are required to file an application with the Regional Board and provide information set forth in regulations adopted by the State Water Resources Control Board (State Water Board). Title 23 Cal. Code Regs. §§ 3855-3861. The Executive Officer of the Regional Board (Executive Officer) or the Regional Board may issue a water quality certification after providing public notice.

3. The Porter-Cologne Water Quality Control Act (Water Code § 13000, et. seq.) requires any person who proposes to discharge waste that could affect the quality of waters of the state to submit a report of waste discharge. Wat. Code §13260(a). California Water Code section 13263 authorizes the Regional Board to issue waste discharge requirements that implement any relevant water quality control plan. State Water Board regulations addressing water quality certification do not limit or prevent regional boards from issuing waste discharge requirements for activities subject to water quality certification.

4. Newhall Land and Farming Company (Newhall Land or Discharger) submitted an application for a permit pursuant to Clean Water Act section 404 (dredge or fill permit) for activities on nearly 14,000 acres of land to the United States Army Corps of Engineers (Corps). Newhall Land also submitted an application to the Regional Board for water quality certification pursuant to the Regional Board's authority under section 401 of the Clean Water Act, and report of waste discharge pursuant to the Regional Board's authority under the California Water Code. This Order grants with conditions Newhall Land's application for a water quality certification pursuant to section 401 of the Clean Water Act and imposes waste discharge requirements (WDRs) pursuant to California Water Code section 13263, consistent with State Water Board regulations. This Order includes conditions and requirements to comply with the Clean Water Act and the California Water Code.

B. PERMIT PARTIES AND RELATED APPROVALS

1. Newhall Land filed an application for Clean Water Act section 401 water quality certification and a Report of Waste Discharge (ROWD) on October 5, 2011, for the discharge of dredged and fill material to waters of the United States, in connection with implementation of the Newhall Ranch Resource Management and Development Plan (RMDP).

2. The RMDP provides for resource management and development in an area encompassing 13,650.7 acres in northwestern Los Angeles County, including the 11,999-acre Newhall Ranch Specific Plan (NRSP) area. Implementation of the RMDP will allow development of a master planned community within the NRSP area, with interrelated villages that provide housing, commercial/industrial uses, and related public facilities and open space. This development is intended to meet long-term housing demands and provide additional jobs in the region to help address demographic growth trends. The RMDP site includes roadway infrastructure improvements within areas adjacent to the NRSP necessary for traffic circulation. The five villages included are: Landmark Village, Mission Village, Homestead South Village, Homestead North Village and Potrero Village, as depicted on Figure 1, incorporated herein by this reference.

3. The RMDP also includes mitigation and conservation measures for the long-term management of sensitive biological resources within the RMDP boundaries, including state and federally protected plant and wildlife species. The RMDP includes a Spineflower Conservation Plan component, which will permanently protect and manage a system of preserves for the San Fernando Valley spineflower, which is listed under the California Endangered Species Act as endangered. The California Department of Fish and Game (CDFG) issued a spineflower incidental take permit (Permit No. 2081-2008-012-05) and a multi-species incidental take permit (Permit No. 2081-2008-013-05) for the RMDP on December 3, 2010. The U.S. Fish and Wildlife Service (USFWS) issued a biological opinion for the RMDP on June 7, 2011, which found that the RMDP will not jeopardize the survival or recovery of federally listed species or adversely modify critical habitat designated under the federal Endangered Species Act.

4. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized or required by this Order, the Discharger must obtain authorization for an incidental take from appropriate authorities prior to taking action. The

Discharger is responsible for meeting all requirements of the applicable Endangered Species Act for the discharge authorized by this Order.

5. The Santa Clara River and tributary drainages will be affected by the project. The tributary drainages which will be affected are in Chiquito Canyon, Lion Canyon, Long Canyon, Potrero Canyon, San Martinez Grande Canyon, Magic Mountain Canyon, Middle Canyon, Exxon Canyon, Dead-end Canyon, Humble Canyon, Off-haul Canyon, Mid-Martinez Grande Canyon, and Ayers Canyon; and several unnamed small canyons.

6. The Corps issued a Clean Water Act section 404 provisional permit for fill of waters of the United States associated with the RMDP on August 31, 2011, contingent on the Regional Board's issuance or waiver of water quality certification (Permit No. 2003-01264-AOA or Corps Permit).

7. The CDFG issued a master Streambed Alteration Agreement for the RMDP on December 3, 2010 (Agreement No. 1600-2004-0016-R5 or CDFG MSAA).

8. The RMDP includes construction of a Water Reclamation Plant (WRP) adjacent to the Santa Clara River; the Regional Board adopted an NPDES permit and Waste Discharge Requirements to the Newhall Ranch Sanitation District for the WRP (Order No. R4-2007-0046) effective October 27, 2007. Construction of this new wastewater facility has not yet begun. Newhall Ranch Sanitation District has submitted to the Regional Board a ROWD for renewal of the NPDES and Waste Discharge Requirements.

9. Clean Water Act section 401 authority to issue water quality certification lies with states and, in California, with the Regional Water Quality Control Boards. Clean Water Act section 401 requires states to act on an application for water quality certification within one year of submittal of a complete application. The Regional Board may deny, deny without prejudice, or issue the water quality certification with conditions.

10. California Water Code section 13263 requires the Regional Water Quality Control Boards to prescribe WDRs for any proposed or existing discharge unless WDRs are waived pursuant to Water Code section 13269.

11. **Water Quality Control Plan.** The Regional Water Board adopted a Water Quality Control Plan for the Los Angeles Region (Basin Plan) on June 13, 1994 that designates beneficial uses, establishes water quality objectives to protect the beneficial uses, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. There have been a number of amendments (including total maximum daily loads) to the Basin Plan that have been adopted subsequent to the 1994 adoption. In addition, the Basin Plan incorporates State Water Board policies including Resolution No. 88-63, which established state policy that all waters,

with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the receiving surface waters are itemized in the attached Table 1a, Basin Plan Beneficial Uses – Surface Waters. Beneficial uses applicable to the receiving groundwaters are itemized in Table 1b, Basin Plan Beneficial Uses – Groundwaters. The United States Environmental Protection Agency (USEPA) adopted water quality criteria that apply in California (the California Toxics Rule and some criteria in the National Toxics Rule) to discharges to navigable waters. The Regional Board is required to implement the California Toxics Rule. This Order is in compliance with the Basin Plan, and amendments thereto, and the California Toxics Rule.

12. Clean Water Act section 305(b) requires each state to report biennially to USEPA on the condition of its surface water quality. Under Clean Water Act section 303(d), each state must review, make necessary changes, and submit a list of impaired waters to USEPA (the 303(d) list). The USEPA has issued guidance to states which requires the two reports to be integrated. For California, this combined report is called the California 303(d)/305(b) Integrated Report (Integrated Report). The 2010 Integrated Report included changes to the 2006 Clean Water Act section 303(d) list of impaired water bodies and Clean Water Act section 305(b) report on the quality of waters in California. On October 11, 2011, USEPA issued its final decision on the waterbodies and pollutants included by California in its Integrated Report. The USEPA-approved list serves as the State's most recent list of impaired waterbodies. The list (hereinafter referred to as the 2010 303(d) List) was prepared in accordance with Clean Water Act section 303(d) to identify specific impaired waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.

Santa Clara River is on the 2010 303(d) List. The following pollutants were identified as impacting the receiving waters:

i) Santa Clara River Reach 7 (Bouquet Canyon Rd to above Lang Gauging Station) —Coliform Bacteria;

ii) Santa Clara River Reach 6 (West Pier Hwy 99 to Bouquet Canyon Rd.) — Coliform Bacteria, Chlorpyrifos, Diazinon, Toxicity, Iron, Copper; Chloride

iii) Santa Clara River Reach 5 (Blue cut to West Pier Hwy 99 Bridge) — Coliform Bacteria and Iron; Chloride

iv) Santa Clara River Reach 3 (Freeman Diversion to A Street)—Total Dissolved Solids and Toxicity; Ammonia, Chloride

v) Santa Clara River Reach 1 (Estuary to Hwy 101 Bridge)—Toxicity; and

vi) Santa Clara River Estuary— Chem A[1], Coliform Bacteria, Toxaphene, Toxicity, and Nitrogen/Nitrate.

13. **TMDLs.** Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (including a "margin of safety"). The TMDL allocates the loads among current and future pollutant sources to the water body. The 2010 303(d) List includes a List of Water Quality Limited Segments Being Addressed by EPA Approved TMDLs. Several TMDLs have been adopted by the Regional Board and approved by USEPA for the Santa Clara River:

i) Santa Clara River Bacteria TMDL in effect March 21, 2012. This TMDL addressed fecal-indicating bacteria in the Santa Clara River estuary and reaches 3, 5, 6 and 7. The single sample target for *E. coli* is 235/100ml expressed in allowable exceedance days and the geometric mean target is 126/100ml.

ii) Santa Clara River Chloride TMDL. The Regional Board adopted the TMDL in 2002. The State Water Board remanded the TMDL in 2003. The Regional Board revised the TMDL in July 2003 in response to the remand. In 2004, the Board amended the TMDL to update the interim waste load allocations, and in 2006 to revise the implementation schedule. The Regional Board most recently revised the TMDL and adopted conditional site specific objectives in December 2008. This TMDL is in effect as of April 6, 2010. The site specific objectives in the revised TMDL are conditioned on implementation of salt reduction/export projects by County Sanitation Districts of Los Angeles County (CSDLAC). CSDLAC is not implementing the required salt reduction/export projects; therefore, the water quality objectives for chloride are the current levels in the Basin Plan, which are 100 mg/L. The TMDL requires several interim deliverables prior to the final compliance deadline of May 4, 2015, including an EIR and a facilities plan to comply with final limits, which were due on May 4, 2011. CSDLAC did not submit an EIR or an adequate facilities plan and on May 27, 2011, the Executive Officer issued Notices of Violations (NOVs) for failure to complete these tasks. In response to the NOVs, CSDLAC submitted a letter stating it would prepare an EIR and facilities plan to comply with an effluent limit of 100 mg/L, while at the same time pursuing an alternative compliance approach. On January 6,

[1] The 2010 TMDL for the Santa Clara River estuary which was incorporated into the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands made the finding that the estuary was not impaired by Chem A compounds; however, the 303(d) list has not yet been updated to reflect the non-impairment.

2012, CSDLAC issued a Notice of Preparation of an EIR for facilities to comply with the 100 mg/L limit

iii) Santa Clara River Nutrients TMDL, in effect March 24, 2004. This TMDL addressed ammonia, nitrate and nitrite in reaches 3, 7 and 8.

C. BACKGROUND/HISTORY.

1. The Los Angeles County Board of Supervisors approved the NRSP, and certified the Newhall Ranch Specific Plan Program Environmental Impact Report (EIR) on May 27, 2003. At the same time, the Board of Supervisors approved the Newhall Ranch Specific Plan Resource Management Plan (RMP). The RMP set forth, at a conceptual level, mitigation and management standards for sensitive biological resources located within the boundary of the approved NRSP.

2. Newhall Land applied to the Corps for a Clean Water Act section 404 permit in June 2003. Since then, Newhall Land has provided the Corps with extensive information regarding the proposed RMDP and potential alternatives, in order to ensure that the Corps will issue a Clean Water Act Section 404 permit for the least environmentally damaging practicable alternative (LEDPA), as required by Clean Water Act section 404(b)(1) and federal regulations. The Corps' Clean Water Act section 404(b)(1) alternatives analysis evaluated both off-site and on-site alternatives to the proposed project through an iterative process that gave particular consideration to high-value aquatic resources found within the RMDP area.

3. In July 2003 and February 2004, the Corps, CDFG, and Regional Board staff participated in field delineations of wetland and non-wetland waters of the United States and CDFG's streambed and riparian jurisdiction. A total of 10 site visits by the agencies were conducted to refine the delineations. In 2010, these delineations were revised and updated. CDFG asserts jurisdiction over 965.7 acres of aquatic resources and riparian areas within the RMDP site, which includes all of the 660.1 acres of waters of the United States present. Typical delineations to determine waters of the United States and, therefore, jurisdiction under the Clean Water Act, limit the boundaries to the visible Ordinary High Water Mark, however, for the RMDP site, the limits of the waters of the United States were mapped conservatively at the top of the stream bank to be coterminous with CDFG's riparian jurisdiction in the RMDP sites smaller streams. Only along portions of the Santa Clara River and small portions of larger drainages, such as Chiquito Canyon, was adjacent riparian vegetation outside of the stream bank not mapped as waters of the United States.

4. In 2004, the Corps, and CDFG, (in coordination with USFWS, USEPA, and Regional Board staff), developed seven development alternatives to be analyzed for environmental impacts, with graduated levels of minimization and avoidance of impacts to higher function and value streams and associated habitats, for the Corps' analysis of the RMDP. The Corps' first stage of analysis for on-site alternatives included the seven alternatives, including Newhall Land's proposed project which was Alternative 2, a no-fill alternative, and various other configurations designed to increase avoidance of waters of the United States. In addition, avoidance of CDFG's riparian jurisdiction and conservation of spineflower resources was also considered as part of CDFG's permitting responsibilities.

5. Referring to the seven alternatives, the Corps and CDFG prepared a Joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the RMDP. The CDFG was the lead agency under the California Environmental Quality Act (CEQA) and the Corps was the lead agency under the National Environmental Policy Act (NEPA), for the purpose of analyzing environmental impacts of the RMDP (State Clearinghouse No. 2000011020). CDFG approved the final EIS/EIR on December 3, 2010, and the Corps approved the final EIS/EIR on August 31, 2011.

6. In addition to complying with NEPA, the Corps conducted an analysis pursuant to the Clean Water Act Section 404 (b)(1) Guidelines. The Corps initially prepared an alternatives analysis that evaluated three off-site alternatives and seven on-site alternatives as described above. From these alternatives, the Corps identified Alternative 3 as the Initial LEDPA and then directed Newhall Land to make additional modifications to Alternative 3 to increase avoidance of impacts to waters of the United States along the Santa Clara River, reduce impacts to a high-value spring complex in Middle Canyon, increase spineflower preserve acreage, and create larger riparian corridors in the five major tributary drainages. The Corps also considered various "sub-alternatives" that focused on the practicability of additional avoidance of impacts to waters of the United States in specific high-value resource areas and tributaries within the RMDP area. The Corps identified practicable additional avoidance of impacts to waters of the United States in Potrero Canyon and San Martinez Grande Canyon, further reducing permanent impacts by approximately 18 acres. The Corps chose this modified Alternative 3 as the "Draft LEDPA." The Draft LEDPA entailed 66.3 acres of permanent impacts and 32.2 acres of temporary impacts to waters of the United States, compared to 93.3 acres of permanent impacts and 33.3 acres of temporary impacts to waters of the United States for the proposed project.

7. The Corps coordinated with the USEPA Region 9, CDFG, and the Regional Board on its consideration of alternatives. Among other points, both USEPA Region 9 and the Regional Board staff especially expressed concern with the conclusion in the Draft LEDPA that avoidance in the Potrero Canyon

Drainage was not practicable under the Clean Water Act Section 404(b)(1) Guidelines. As a result of these discussions, proposed impacts in Potrero Canyon were reduced by 18.4 acres of waters of the United States, including 3.5 acres of wetlands in the middle reach of Potrero Canyon. This avoidance was achieved primarily by reconfiguring the development areas in Potrero Canyon and relocating the proposed manufactured open space to be adjacent to the drainage. The resulting project significantly minimizes impacts to Potrero Canyon. The Corps determined that the resulting project configuration was the "Final LEDPA" because no additional avoidance of waters of the United States was practicable in light of cost, logistics and the overall project purpose.

8. The Corps issued a provisional Clean Water Act section 404 permit for the Final LEDPA on August 31, 2011 (404 permit). The provisional 404 permit is made final by the issuance of this Order, which includes a Water Quality Certification with conditions pursuant to section 401 of the Clean Water Act. The 404 permit authorizes permanent impacts to 47.9 acres of waters of the United States (45.4 acres less than the proposed project), including 5.1 acres of wetlands (15.4 acres less than the proposed project). These impacts are associated with bank protection along water courses; drainage facilities such as storm drains or outlets and partially lined open channels; grade control structures; bridges and drainage crossings; building pads; and water quality control facilities. The 404 permit also authorizes temporary impacts to 35.3 acres of waters of the United States (2 acres more than the proposed project), including 11.8 acres of wetlands (0.6 acres more than the proposed project), associated with the construction of bank protection along water courses; utility crossings; construction of a WRP adjacent to the Santa Clara River; water quality control facilities; regular and ongoing maintenance of all flood, drainage, and water quality protection structures and facilities on the RMDP site; and temporary haul routes for grading equipment and geotechnical survey activities. The 404 permit requires Newhall Land to provide mitigation of these impacts through restoration of temporary impact areas and enhancement, restoration, and creation of 132.2 acres of waters of the United States, consisting of 35.2 acres of wetland waters and 97 acres of non-wetland waters within the Santa Clara River and its tributaries. These mitigation requirements result in a minimum of 2.4:1 mitigation ratio for permanently impacted waters and 1:1 ratio for temporary impacts. To account for temporal loss of habitat functions and services, the permit specifies that 54.9 acres of compensatory mitigation be implemented prior to any development impacts to waters of the United States, including 19.3 acres of wetlands creation in Lower Potrero Canyon, 15.9 acres of wetland creation in the Santa Clara River at Mayo Crossing, and 19.7 acres of habitat enhancement in portions of the upper Salt Creek watershed. The 404 permit is valid for 20 years.

9. Overall, the Final LEDPA will avoid permanent or temporary impacts to approximately 87 percent (576.9 acres) of the total 660.1 acres of waters of

the United States present on the RMDP site, compared to 80 percent avoidance under the proposed Project.

10. Newhall Land will preserve and protect in perpetuity approximately 612.2 acres of waters of the United States, including 271.8 acres of wetlands and approximately 271,861 linear feet of existing waters of the United States in Castaic Creek, the Santa Clara River and tributary drainages within the RMDP area. Conservation easements or deed restrictions shall provide mitigation for impacts associated with the RMDP, in addition to the creation, restoration and enhancement of waters of the United States. The purpose of the conservation easements or deed restrictions is to preserve in perpetuity high quality habitat for certain species and to preserve wildlife habitat and habitat values (conservation values) of great importance to the people of the State of California.

11. On August 6, 2012, Newhall Land entered into a preliminary floodplain conservation agreement with the California Coastal Conservancy to protect floodplain values associated with property owned by Newhall Land downstream of the RMDP site (Newhall/Conservancy Agreement). The Newhall/Conservancy Agreement will further the goals of the Conservancy's Santa Clara River Parkway Project (Parkway Project). Under the Newhall/Conservancy Agreement, Newhall Land will record a restrictive covenant for floodplain protection over 439 acres of land located in Ventura County as shown on Exhibit 1 to the Newhall/Conservancy Agreement labeled, "Figure 2, Newhall Land Ventura County Property Floodplain Area." The 439 acres required under the Newhall/Conservancy Agreement include the 80 acres of upland floodplain required to be placed under a restrictive covenant under Section 3.1-6 of this Order. The Newhall/Conservancy Agreement requires the restrictive covenant to be consistent with the terms of that covenant required by Section 3.1-6 of this Order.

Farm areas covered by the restrictive covenant that are scoured by flooding will not be reclaimed for farm purposes except as needed for water wells, pipelines, utility lines, outfall structures, roads and other infrastructure. Newhall Land reserves the right to conduct habitat restoration and enhancement activities on the lands covered by the restrictive covenant.

Under the Newhall/Conservancy Agreement, Newhall Land also will provide public access for a pedestrian trail from the Newhall Ranch Specific Plan Regional Trail terminus at the Los Angeles County – Ventura County line on the north side of the Santa Clara River south of SR 126, downstream along the north bank of the River to the downstream limit of the Newhall Ranch property.

The Newhall/Conservancy Agreement is conditioned upon the Regional Board's approval of this Order, including resolution of any and all challenges

to such approval. Newhall Land's obligations under the agreement will take effect upon commencement of the development activities authorized under this Order.

12. CDFG issued the CDFG MSAA for the RMDP on December 3, 2010 (Agreement No. 1600-2004-0016-R5). The CDFG MSAA authorizes permanent impacts to 77.55 acres of resources within CDFG jurisdiction and temporary impacts to 50.14 acres.

13. The EIR for Landmark Village was approved by the County of Los Angeles Department of Regional Planning on October 4, 2011. The Regional Board is a responsible agency under CEQA for the Landmark Village EIR and has considered the environmental documentation of the lead agency. Regional Board staff commented on the draft EIR on January 22, 2007 and the comments were considered in the final EIR.

14. The EIR for Mission Village was approved by the County of Los Angeles Department of Regional Planning on October 25, 2011. The Regional Board is a responsible agency under CEQA for the Mission Village EIR and has considered the environmental documentation of the lead agency. Regional Board staff commented on the draft EIR on January 4, 2011 and the comments were considered in the final EIR.

15. The County of Los Angeles will be required to conduct additional environmental analysis under CEQA for additional villages or phases of the project.

16. The California Rapid Assessment Method (CRAM) is a standardized, cost-effective tool for assessing the health of wetlands and riparian habitats. This Order requires the use of CRAM for assessments of impacts to waters of the United States and for assessments of restored, created or enhanced waters in order to measure their efficacy.

17. **Stormwater Mitigation Plan.** Newhall Land prepared the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan (NRSP Sub-Regional SWMP), a comprehensive stormwater mitigation plan for the RMDP using a watershed-based approach that addresses pollutants of concern and hydrologic conditions of concern that can affect aquatic and riparian habitat and natural resources, In April 2008, the Los Angeles County Department of Public Works submitted the NRSP Sub-Regional SWMP to the Regional Board for review. The Regional Board Executive Officer determined, based on this review, that the NRSP Sub-regional SWMP was consistent with the 2001 Los Angeles County MS4 Permit (Order No. 01-182) and adequately covered the requirements for the Regional BMP substitution under the Development Planning Program, Regional Storm Water Mitigation Program provision (§ 4.D(9)) of the Los Angeles County MS4 Permit. The NRSP Sub-Regional

SWMP was developed by Newhall Land in cooperation with Los Angeles County, consistent with the requirements of the Los Angeles County MS4 Permit and the Standard Urban Stormwater Mitigation Plan (SUSMP). It sets forth the urban runoff management program that will be implemented for the NRSP subregion. The Plan identifies the site design, source control, low impact development, treatment control, and hydromodification control best management practices (BMPs) that will be incorporated into each development area within the NRSP subregion to protect beneficial uses in the Santa Clara River and its tributaries. The NRSP Sub-Regional SWMP was accepted by the Los Angeles Regional Board Executive Officer in May 2008. As such, the NRSP Sub-Regional SWMP is enforceable as it substitutes for the standard Development Planning Program requirements contained in the Los Angeles County MS4 Permit. Subsequently, a Newhall Ranch LID Performance Standard was developed, in consultation with USEPA Region 9 and the Regional Board (discussed in more detail in Part 1, Section 3.0 Provisions paragraph 13) which further clarifies the LID standards that will be applied to the build-out of the NRSP.

Tiered Review Process. Three levels of stormwater plan preparation have been established for the build-out of the NRSP. These levels include the NRSP Sub-Regional SWMP, which is a programmatic-level stormwater management plan that applies to the entire NRSP area (Tier 1); the Project Water Quality Technical Report, which provides the project-level stormwater plan for each of the villages within the NRSP area (Tier 2); and the final Project SUSMP, which will be prepared prior to the recordation of any final subdivision map (except those maps for financing or conveyancing purposes only) or the issuance of any grading or building permit, whichever comes first (Tier 3).

Project Water Quality Technical Report (WQTR). The Project WQTR, Tier 2, is prepared to ensure consistency with the terms and content of the NRSP Sub-Regional SWMP for each project within the subregion (i.e., Landmark Village, Mission Village, Homestead, and Potrero Valley). The Project WQTR provides more specific information and detail concerning how the provisions of the NRSP Sub-Regional SWMP will be implemented within the area covered by the Project WQTR, based upon the proposed land uses from the tentative tract maps filed with the County of Los Angeles (this level of detail is usually at a scale of 1" = 100'). At a minimum, each Project WQTR provides supplemental and site specific information concerning: (1) how site design, source control, low impact development, treatment control, and hydromodification control BMPs will be implemented at the project level for the area in question; (2) stormwater BMP sizing and locations within the subject project area; and (3) operation and maintenance responsibility for stormwater BMPs within the relevant project area. Newhall Land is required to prepare and submit to the Executive Officer for review a Project WQTR and Drainage Concept Report for each subsequent development area within

the RMDP site as a condition of this permit. Regional Board staff reviewed and concurred with the Tier 2 Project Water Quality Technical Reports for the Landmark Village and Mission Village projects within the NRSP subregion.

18. Los Angeles County has land use and grading plan approval authority over each individual village of the NRSP. The Landmark Village and Mission Village subdivisions represent the first phases of development and were approved by Los Angeles County on February 21, 2012 and May 16, 2012, respectively. Later phases of development will be submitted for Los Angeles County approval, with development of these areas occurring over an estimated 20 year time frame. A preliminary development schedule is shown in attached Table 2, Project Development Phasing.

19. As part of Newhall Land's local environmental review process, Newhall Land retains a qualified environmental consulting firm to conduct a Phase I site assessment according to applicable ASTM standards. The tasks performed in the Phase I site assessment are expanded to include soil analysis and sampling for pesticides of areas within the RMDP that either presently or historically have been used for agricultural activities. The pesticide sampling includes Organochlorine pesticides (OCP), including DDT and degradation products, by EPA Method 8081; Organophosphate pesticides (OPP) by EPA Method 8141; and Chlorinated herbicides (CH) by EPA Method 8151..

    Phase I assessments, expanded to include this soil sampling and analysis, have been conducted for the Landmark Village, Mission Village, and Homestead development areas. To date, no samples exceed either U.S. EPA Preliminary Remediation Goals (PRGs) or California Human Health Screening Levels (CHHSLs). Prior to development within the RMDP that presently or historically have been used for agricultural activities, this Order requires Newhall Land to submit for Executive Officer approval and implement a workplan for soil sampling and analysis for pesticides and herbicides in those areas.

20. The Board of Supervisors of the County of Los Angeles included the following as conditions of approval for Landmark Village and Mission Village Tracts of Newhall Ranch. Prior to obtaining its first building permit within Newhall Ranch:

    A. The subdivider shall be required to complete all of its obligations for sending wastewater to the Valencia Water Reclamation Plant ("WRP") as required by the Agreement for Coordination of Wastewater Management Facilities dated January 9, 2002 (CSD Contract No. 3868), and shall provide a letter to Regional Planning from Santa Clarita Valley Sanitation District certifying that such obligations have been satisfied,

B. At the subdivider's sole cost, and for purposes of further treating wastewater that will be sent to the Valencia WRP from Newhall Ranch to a chloride concentration level of or less than 100 mg/l for up to 6,000 equivalent units, the subdivider shall complete the construction of interim chloride and demineralization facilities to the satisfaction of the Santa Clarita Valley Sanitation District, when facilities shall consist of, at a minimum: (1) a 1.2-acre demineralization facility to be constructed adjacent to the existing Valencia WRP; (2) a 1.6-acre brine disposal well facility located within the Valencia Commence Center, north of Castaic Creek; and (3) associated lines to and from the Valencia WRP to be constructed in existing road rights-of-way primarily within the project's utility corridor. For purposes of this condition and Condition No. 53, "equivalent dwelling units" shall represent a wastewater equivalency determination based on an equivalency formula used by the Santa Clarita Valley Sanitation District.

The subdivider or designed shall grant any necessary easement(s) acceptable to the Santa Clarita Valley Sanitation District and the Newhall Ranch Sanitation District for use of the utility corridor to facilitate the construction and operation of the Newhall Ranch WRP.

C. Prior to obtaining a building permit(s) for any construction that would result in Newhall Ranch's exceeding 3,000 equivalent dwelling units, the subdivider or its designee shall complete site grading and bank protection of the Newhall Ranch WRP site and the utility corridor. Further, prior to obtaining a building permit(s) that would result in Newhall Ranch's exceeding 4,000 equivalent dwelling units, the subdivider or its designee shall start construction of the initial phase of the Newhall Ranch WRP, and the construction of this initial phase of the Newhall Ranch WRP shall be completed on or before the date that construction of the 6,000th equivalent dwelling unit within Newhall Ranch is completed.

Interim Wastewater Treatment. The wastewater generated by the first 6,000 dwelling units of the NRSP will be treated on an interim basis by the Santa Clarita Valley Sanitation District (SVCSD) at the existing Valencia WRP pursuant to the terms of an Interconnection Agreement entered into on January 9, 2002, between Newhall Land and the former Los Angeles County Sanitation District Nos. 26 and 32 (now known as the SCVSD). The Valencia WRP discharges tertiary-treated wastewater to the Santa Clara River pursuant to Order No. R4-2009-0074 and NPDES Permit No. CA0054216, which set forth WDRs, including effluent limitations, and a monitoring and reporting program that apply to the discharges of effluent from the facility. In conjunction with the interim treatment of wastewater generated by the first 6,000 dwelling units of the NRSP at the Valencia WRP, Newhall Land will

construct interim chloride reduction facilities which would operate until the first phase of the Newhall Ranch WRP is constructed. The chloride reduction facilities will consist of: (a) a 1.2-acre demineralization facility using reverse osmosis or an equivalent process, to be constructed adjacent to the existing Valencia WRP; (b) a 1.6-acre brine disposal well facility located within the Valencia Commerce Center; and (c) associated lines to and from the Valencia WRP. The purpose of the chloride reduction facilities is to treat the effluent generated by the first 6,000 dwelling units of the NRSP to meet chloride concentration levels of 100 milligrams per liter or less prior to discharge into the Santa Clara River. Newhall Land will obtain necessary permits for construction and operation of the chloride reduction facilities and Newhall WRP, including a Class I non-hazardous Underground Injection Control permit from USEPA for two injection wells to dispose of brine for the proposed interim chloride facilities and the reverse osmosis system that will be part of the Newhall WRP.

21. **Recycled Water.** Newhall Land plans to maximize the use of recycled water on the project area. Plans include the use of up to 478 acre-feet per month (February through November) and up to 340 acre-feet per month (December and January) of tertiary-treated effluent for landscape irrigation and other uses in an average wet year. However, during wet weather, when the demand for recycled water is low, Newhall Ranch WRP will discharge effluent to the Santa Clara River. The Discharger will apply for WDRs with the Regional Water Board and submit an engineering report with the California Department of Public Health (CDPH), after the Newhall Ranch WRP treatment design is complete. The production, distribution, and reuse of recycled water for direct, non-potable applications will be regulated under separate Water Recycling Requirements. Prior to the operation of the Newhall Ranch WRP, and in times when the demand for recycled water exceeds the amount the Newhall Ranch WRP can provide, treated effluent from the Valencia Water Reclamation Plant will be used to supplement the recycled water supply so that the recycled water customers do not experience a shortage in service.

22. **Buffers**. The RMDP design includes Open Space Buffers along portions of the Santa Clara River consisting of both riparian areas and development setbacks.

Open Space Buffer riparian areas are open space between waters of the United States and the top of the buried bank stabilization that protect sensitive habitat and wildlife corridors and provide opportunities to establish and enhance areas of native habitats. The landward edge of the riparian areas is essentially coterminous with the river trail fencing. The riparian areas buffers mitigate the effects of urban land use on the natural environment and can intercept eutrophic pollutants and pesticides from urban runoff. Buffers may also provide for expansion of wetlands, waters of the United States and riparian

zones. Recreational trails, as allowed by CDFG, and storm drain outfalls and maintenance roads may be located within the riparian buffer.

Open Space Buffer development setbacks are additional open space areas between residential or commercial development and the Open Space Buffer riparian areas. Facilities allowed within the development setbacks include the river trail, fencing, landscaping, utilities, water quality treatment facilities, and roadways. The function of the development setback is to minimize the effects of urban land uses on the Open Space Buffer riparian areas.

In a few locations along the Santa Clara River, Open Space Buffer riparian areas and/or development setbacks are not incorporated into the RMDP design. These locations include: 1) buried bank stabilization where the Chiquito Canyon drainage confluences with the Santa Clara River, at the northern abutment of the Long Canyon Bridge, and at SR-126 intersection improvements at Long Canyon Road; 2) the utility corridor west of San Martinez Grande; 3) the Long Canyon Road and Commerce Center Drive bridges; and 4) the Newhall Ranch WRP immediately upstream of the Ventura County line.

Except at the locations noted in the paragraph above, where development is less than 50 vertical feet above the Santa Clara River (Landmark Village and portions of Homestead South), the RMDP design includes Open Space Buffers between waters of the United States[2] and development, ranging in width from 220 feet to more than 900 feet, with an average width of approximately 550 feet. At the upper mesa development areas in Mission, Homestead South and Potrero Villages, where development is separated from the Santa Clara River by a minimum of 50 vertical feet, the RMDP design includes Open Space buffers ranging in width from 150 feet to more than 2,000 feet, with an average width of approximately 850 feet.

23. Newhall Land is authorized to permanently impact 47.9 acres of waters of the United States, including 5.1 acres of wetlands, associated with discharges of fill material for bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); drainage facilities such as storm drains or outlets and partially lined open channels; grade control structures; bridges and drainage crossings; building pads; and water quality control facilities (sedimentation control, flood control, debris, and water quality basins), all as described in **Attachment 1**, 404 Permit Final LEDPA Project Description and the Corps' Section 404 Permit No. SPL-2003-01264-AOA.

[2] Waters of the United States as defined in the Newhall Ranch RMDP 404 Permit issued by the Corps on August 31, 2011.

24. Newhall Land is authorized to temporarily impact 35.3 acres of waters of the United States, including 11.8 acres of wetlands, associated with the construction of bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); utility crossings; activities associated with construction of a Water Reclamation Plant (WRP) adjacent to the Santa Clara River and associated bank protection; water quality control facilities (sedimentation control, flood control, debris, and water quality basins); and temporary haul routes for grading equipment and geotechnical survey activities, all as described in **Attachment 1**, 404 Permit Final LEDPA Project Description and the Corps' Section 404 Permit No. SPL-2003-01264-AOA.

25. Newhall Land is authorized to construct 35 outlets to and in the Santa Clara River; construct two bridges in the Santa Clara River (Long Canyon bridge and the Commerce Center Drive bridge); construct three bridges and 13 culvert road crossings in tributary drainages; and construct other infrastructure including roads, utilities and flood control structures, all as described in **Attachment 1**, 404 Permit Final LEDPA Project Description and the Corps' Section 404 Permit No. SPL-2003-01264-AOA.

D. RMDP PROJECT DESCRIPTION (Corps Final LEDPA)

1. The RMDP will facilitate the development of approximately 19,517 residential units, 5.45 million square feet of commercial uses and public facilities such as parks, schools and libraries on approximately 2,570 acres. Of the 13,651 acres within the RMDP project property, approximately 5,084 acres will be graded, with approximately 2,356 acres related to residential and commercial development; approximately 235 acres related to public facilities; approximately 552 acres related to roads and other infrastructure such as electrical substations; and the remaining 1,975 acres restored as manufactured open space (stabilized slopes revegetated with native vegetation) and recreational areas. This restored manufactured open space consists of approximately 700 acres of contoured slopes that will be planted with native vegetation, approximately 110 acres of utility corridor with restricted native vegetation (native shrub and grasses), approximately 200 acres of golf course (recreational planning unit overlay of approved residential planning areas in Potrero Canyon), 90 acres of parks and recreational areas, and approximately 875 acres of parkways and other landscaped areas. The remaining 8,566 acres will be preserved as natural open space, for a total of approximately 10,528 acres of open space. The grading of the RMDP site will take place in a balanced cut-and-fill process.

2. Approximately 60 percent of the 5,084 acres that will be graded have been historically disturbed. The disturbed areas consist of approximately 1,285

acres of past agricultural operations, 916 acres of grazing land (California annual grassland), and 825 acres of disturbed areas (roads and oil facilities).

3. The RMDP as approved by the Corps (i.e., the Final LEDPA) includes the construction of two bridges across the Santa Clara River. Approximately 26,851 linear feet of buried bank stabilization will be installed in upland and riparian areas along approximately one half of the north bank (19,158 linear feet) and one-third of the south bank (7,693 linear feet) of the Santa Clara River. Twenty-five storm drain outlets will be installed along the north bank and ten outlets on the south bank of the river, and an outfall from the proposed Newhall Ranch WRP to the Santa Clara River will also be constructed. Geofabric bank protection or equivalent will be installed on the north side of the Santa Clara River between San Martinez Grande Canyon and Chiquito Canyon in connection with a utility corridor.

4. Within tributary drainages to the Santa Clara River, the RMDP includes the construction of three bridges over tributaries and 13 culvert road crossings over tributaries. The RMDP includes conversion of 47,195 linear feet of tributary channel to buried storm drain and installation of 67,537 linear feet of bank stabilization outside of waters of the United States along tributary drainages. As a mitigation measure, the 404 permit requires restoration of waters of the United States within 39,792 linear feet of the major tributary drainages. The RMDP avoids impacts to a total of 155,074 linear feet of tributaries. The combined avoidance and restoration of tributary drainages totals to 194,866 linear feet of tributary drainages within the RMDP Project site in the post-development condition, which is approximately 80 percent of the total 242,061 linear footage of jurisdictional drainages currently on the RMDP site. As required by the 404 permit, Newhall Land must preserve, stabilize, and reconstruct tributary drainages, which will, increase acres of tributary drainages from the existing 188.91 acres to 216.75 acres post-project. Dynamically stable channels (where neither long-term erosion and/or deposition is expected to occur, and where restored and/or enhanced vegetation communities would be supported), will be created within the Lion Canyon, Long Canyon, Chiquito Canyon, San Martinez Grande Canyon, Potrero Canyon, including adjacent wetlands, and the Salt Creek drainages.

5. The RMDP Project Description, included as **Attachment 1**, provides a complete description of the RMDP infrastructure and associated development as determined to be the LEDPA pursuant to the Corps' 404(b)(1) Alternatives Analysis.

E. VILLAGE LEVEL PROJECT DESCRIPTIONS

E.1 LANDMARK VILLAGE

1. **Los Angeles County Approved Development.** The Landmark Village portion of the RMDP, as approved by the Los Angeles County Board of Supervisors as outlined above, will be developed on approximately 294 acres located in the central portion of the NRSP area, west of the confluence of Castaic Creek with the Santa Clara River, north of the River and south of SR-126 (Landmark Village Project), all of which will be graded. Development proposed for the Landmark Village Project tract map site includes a mix of housing types; mixed-use/commercial facilities; open space and recreation facilities; and infrastructure uses (*e.g.* parks, a fire station, elementary school, utilities, roads, etc.).

   Residential development will occupy approximately 129 acres of the Landmark Village Project site, while mixed use/commercial uses will occupy approximately 35 acres. Schools, park, open space, recreation and public service uses will occupy approximately 75 acres, and roads and a park and ride facility will occupy approximately 55 acres.

   In addition to the proposed development on the Landmark Village tract map site, the Landmark Village Project includes the development of off-site infrastructure and soil borrow areas. The location of off-site Project areas are depicted on *Figure 1, Village Phasing Plan.* These features are considered part of the Landmark Village Project area and include:

   - 181-acre Adobe Canyon borrow site and associated haul roads. The borrow site is located south of the Santa Clara River.
   - Four debris basins for stormwater flows collected by the tract map's storm drainage system. The basins will be located in an area approximately 120 acres in size directly north of SR-126 and east and west of Chiquito Canyon.
   - One potable water tank and one recycled water tank.

2. **Project Grading.** Off-site grading is required at several locations to develop the tract map site. The Adobe Canyon borrow site will be used to obtain soil to elevate the tract map site above the floodplain, and grading in Chiquito Canyon is required for the construction of debris basins and water tanks. Project-related grading will require the removal and recompaction of approximately 4.2 million cubic yards of soil material, and up to 5.8 million cubic yards of soil import from the Adobe Canyon borrow site. Approximately 1.2 million cubic yards will be excavated from the Chiquito Canyon grading site and placed as fill in the adjacent canyons or be transported and stockpiled on the project site and/or tract map site. Approximately 98% of the Landmark Village area, or approximately 369 acres, will be graded, including 294 acres for the development and 75 acres of revegetated open space.

3. **Waters Affected by the Project.** There are approximately 2.48 acres of waters of the United States on the Landmark Village Project site, including 0.87 acres of

waters in the Santa Clara River and 1.61 acres of waters within an on-site tributary drainage. The Landmark Village Project avoids these waters of the United States to the extent practicable. Of the 0.87 acres of waters of the United States within the Santa Clara River mainstem, the Landmark Village Project will result in permanent impacts to 0.06 acres. Of the 1.61 acres of waters of the United States located within the Agricultural Ditch tributary drainage, the Landmark Village Project will result in 1.37 acres of permanent impacts.

There are no wetland waters of the United States associated with the Santa Clara River on the Landmark Village Project site. There are no wetland waters associated with the Agricultural Ditch tributary drainage. Additional information about impacts to the jurisdictional resources of the Santa Clara River and the on-site tributary drainage follows.

4. **Santa Clara River – Proposed Infrastructure and Impacts.** The Landmark Village Project will construct approximately 11,232 linear feet of soil cement bank stabilization along the north bank of the Santa Clara River as shown on *Figure 2, Santa Clara River Major Features* and summarized in Table 3. The bank stabilization will result in approximately 0.06 acres of permanent impacts and 0.42 acres of temporary impacts to waters of the United States within the Santa Clara River. The Landmark Village Project also includes the installation of two public trail viewing platforms and 12 stormwater drainage outfalls that will discharge to the Santa Clara River. The installation of those facilities will not result in impacts to waters of the United States.

5. **Tributaries – Proposed Features and Impacts.** There are no major tributaries to the Santa Clara River located on the Landmark Village Project site. A minor tributary known as "Agricultural Ditch" extends across the project site. Approximately 1,479 feet of this drainage channel will be converted to a buried storm drain, resulting in 1.37 acres of temporary impacts to waters of the United States and 0.06 acres of permanent impacts. Development of the Landmark Village Project will preserve approximately 329 feet of this drainage channel, which contains 0.18 acres of waters. Tributary drainage impacts are summarized in Table 4 and shown on *Figure 3, Modified, Converted, and Preserved Tributary Drainages.*

E.2 MISSION VILLAGE

1. **Los Angeles County Approved Development.** The Mission Village, as approved by the Los Angeles County Board of Supervisors as outlined above, encompasses approximately 1,260-acres located in the northeast corner of the NRSP area, south of the Santa Clara River and SR-126 and west of Interstate 5 (Mission Village Project), as shown on *Figure 1, Village Phasing Plan.* Development proposed for the Mission Village Project includes a mix of housing types; mixed-use, office and commercial facilities; open space and recreation areas; and infrastructure uses (*e.g.* parks, a fire station, library, school, utilities, roads, etc.). The Mission Village Project also includes regional access

improvements, including the construction of the Commerce Center Drive Bridge, which will connect the existing northern terminus of Commerce Center Drive at SR-126 with the proposed southern extension of Commerce Center Drive onto the Mission Village Project.

Residential development will occupy approximately 389 acres of the Mission Village Project, while mixed use and commercial uses will occupy approximately an additional 57 acres. School, park, recreation and other public service uses will occupy approximately 56 acres, and utility and road facilities will occupy approximately 164 acres. In total, proposed development will involve grading of approximately 666 acres, or approximately 49 percent, of the Mission Village Project.

In addition to the proposed on-site development (*i.e.,* on the Mission Village tract map site) the Mission Village Project includes the development of off-site access and utility improvements, as shown on *Figure 1, Village Phasing Plan.* These features are considered part of the Mission Village Project area. Off-site facilities include:

- An extension of Magic Mountain Parkway to provide regional access between the project site and I-5.
- A new Southern California Edison substation located south of the Mission Village area.
- Three water tanks, two debris basins, one water quality basin, and minor grading to facilitate on-site development and access routes.

2. **Open Space.** The Mission Village project includes approximately 693 acres of open/recreation space, including 85.8-acres of spineflower preserves, approximately 40 acres of parks and recreation centers, 275.9 acres of open space including 212.6 acres of river.

3. **Project Site Grading.** The Mission Village Project will result in approximately 27.9 million cubic yards of grading (27.9 million cubic yards of cut and 27.9 cubic yards of fill), including grading required for a sanitary sewer system and pump stations, potable and reclaimed water systems, and drainage improvements. The site is a balanced cut-fill development area, with minimal import or export required. Approximately 73% of the Mission Village area, or approximately 995 acres, will be graded, including 666 acres for the development and 328 acres of revegetated open space.

4. **Waters Affected by the Project.** There are approximately 173.81 acres of waters of the United States within the Mission Village Project site, including 151.45 acres of waters of the United States in the Santa Clara River and 22.36 acres of waters of the United States within tributary drainages. Of the 151.45 acres of waters of the United States within the Santa Clara River mainstem, the Mission Village Project will avoid 170.53 acres and result in permanent impacts to 2.36

acres. Of the 22.36 acres of waters of the United States located within tributary drainages, the Mission Village Project will avoid 3.10 acres, including 0.77 acres in Exxon Canyon, 2.19 acres in Middle Canyon, and 0.14 acres in Unnamed Canyon D. The project will result in 15.05 acres of permanent impacts to waters of the United States located in tributary drainages.

Of the waters of the United States within the Mission Village Project area, there are approximately 43.98 acres of wetland waters of the United States, including 41.85 acres of wetlands in the Santa Clara River and 2.13 acres of wetland waters of the United States within tributary drainages (Middle Canyon). Of the 41.85 acres of wetlands within the Santa Clara River mainstem, the Mission Village Project will avoid 40.15 acres and result in permanent impacts to 1.70 acres. The Mission Village Project avoids all of the 2.13 acres of wetlands located within Middle Canyon. Additional information about impacts to the jurisdictional resources of the Santa Clara River and tributary drainages follows.

5. **Santa Clara River – Proposed Infrastructure and Impacts.** The infrastructure associated with the Mission Village Project includes the Commerce Center Drive bridge and approximately 1,866 linear feet of soil cement bank stabilization along the south bank of the Santa Clara River as shown on *Figure 2, Santa Clara River Major Features*. The bridge and bank stabilization will result in approximately 2.23 acres of permanent impacts and 5.26 acres of temporary impacts to waters of the United States within the Santa Clara River. The conversion of drainages to storm drains and displacement of drainages by development will require the fill of an additional 0.12 acres of waters within the river. The Mission Village Project also includes the installation of three stormwater drainage outfalls that will discharge to the Santa Clara River, which will require fill of an additional 0.10 acres of waters within the river.

In total, the Mission Village Project will cause 2.36 acres of permanent impacts to waters of the United States in the Santa Clara River, including 1.7 acres of wetlands. The Project will also result in 5.26 acres of temporary impacts to waters of the United States, including 1.61 acres of wetlands. Impacts to the Santa Clara River associated with the Mission Village Project are summarized in Table 3.

6. **Tributaries – Proposed Features and Impacts.**

Lion Canyon. The Mission Village project includes the stabilization of the mainstem of Lion Canyon and filling of the minor branches of the drainages. This will result in 2.61 acres of permanent impacts and 2.18 acres of temporary impacts to waters of the United States in Lion Canyon as depicted on *Figure 4, Lion Canyon Detail*. No impacts to wetland waters will occur in the Lion Canyon drainage.

Of the 2.61 acres of permanent impacts, 1.26 acres are related to conversion of 2,595 feet of existing creek channel to buried storm drain. Other impacts to Lion

Canyon include the installation of one road crossing culvert; and displacing creek channels to accommodate proposed development. The installation of grade control structures, debris basins and a regional water quality basin will also result in permanent impacts to jurisdictional resources. Permanent impacts to waters of the United States resulting from modifications to creek channels, grade control structures, and debris/water quality basins are summarized in Table 5.

Waters located in portions of the Lion Canyon drainage that are currently unstable and subject to erosion and head cutting, will be temporarily impacted by modifying existing channels to create a new and restored soft bottom channel. The new creek channel will be designed to stabilize the channel, maintain sediment equilibrium, enhance habitat, and protect the channel bed and banks from hydromodification. Long-term stabilization of the creek channel will be accomplished by installing approximately 26 step-pool grade control structures along 5,835 feet of the restored creek channel. Development in Lion Canyon will include installation of four debris basins and one regional water quality basin.

A typical grade control structure proposed for the RMDP is illustrated on *Figure 4, Lion Canyon Detail*. The design consists of three structural elements: a sill; a drop; and a stilling pool. The sill is a relatively narrow, linear feature, perpendicular to stream flow and typically extends across the entire width of the drainage (in some cases in the range of 50 to 400 feet in total width). The sill may be constructed using soil cement or buried riprap rock, with the area upstream of the sill being planted with riparian vegetation. The sill is designed to control stream sinuosity, training the flow within the boundaries of the channel bank protection. At the low point of the sill, a drop structure (approximately 3 to 15 feet high) is constructed using soil cement or exposed grouted, or ungrouted, riprap rock facing. This portion of the structure is not vegetated, and dissipates energy over the armored drainage feature. The requirements for grouting the drop portion of the structure is mainly dependent upon the flow energy needing to be dissipated. The stilling pool is used to further reduce flow velocity to preclude scouring of the downstream channel, and is constructed out of grouted or ungrouted riprap rock and gravel. These methods of channel bed stabilization were selected over the traditional vertical concrete drop structures as their elements: allow for and promote establishment of native vegetation; do not create a barrier to wildlife movement; do not require any routine maintenance; and the visual appearance mimics the natural environment.

Upon completion of stabilization and bank protection construction and restoration of disturbed areas, the Lion Canyon drainage will provide approximately 2.1 acres of waters of the United States mitigation area, and approximately 1.7 additional acres of California Department of Fish and Game Streambed Alteration Agreement mitigation capacity within the resulting bed and bank. These post-development areas are indicated on *Figure 4, Lion Canyon Detail.*

Minor Tributaries. In addition to impacts in Lion Canyon, the Mission Village Project will result in permanent impacts to approximately 15.05 acres of waters of the United States in minor tributaries located on the Mission Village Project site as shown on *Figure 3, Modified, Converted, and Preserved Tributary Drainages.* No temporary or permanent impacts to wetland waters will occur in the minor tributaries. Impacts to the minor tributaries are described below and summarized on Table 4.

Exxon Canyon. Portions of this tributary will be converted to buried storm drains to accommodate proposed development. Approximately 1,754 feet of this drainage channel will be converted to a buried storm drain, resulting in 0.44 acres of permanent impacts to waters of the United States. Development of the Mission Village Project will preserve 1,788 feet of this drainage channel, which contains 0.77 acres of waters.

Middle Canyon, Unnamed Canyon D. A majority of Middle Canyon Drainage will be filled, with approximately 7,443 feet converted to buried storm drain and 143 feet of the lower section of the drainage preserved. Similarly, approximately 1,241 feet of Unnamed Canyon D will be converted to storm drain, with 250 feet preserved at the confluence with the Santa Clara River.

Dead End Canyon and Magic Mountain Canyon. Each of these tributaries will be substantially converted to buried storm drains to accommodate proposed development. The entire lengths of these canyons will be filled: including approximately 1,931 feet of Dead End Canyon, and approximately 6,111 feet of Magic Mountain Canyon within Mission Village.

Unnamed Canyon 1, and Unnamed Canyon 2. The two off-site tributaries within the Magic Mountain Parkway roadway extension at the eastern boundary of the Mission Village project area will be substantially converted to buried storm drains to accommodate proposed development. Specifically, the entire lengths of the canyons will be filled: approximately 4,647 feet of Unnamed Canyon 1; and approximately 416 feet of Unnamed Canyon 2.

E.3 UTILITY CORRIDOR/WRP OUTFALL/SR 126 BRIDGE WIDENING

1. **Project Characteristics.** The RDMP includes the development of utility service systems to serve urban development on the NRSP area. Utility systems that will result in permanent and temporary impacts to waters of the United States include a utility corridor, the treated wastewater outfall of the Newhall Ranch WRP, and widened bridges and culverts located along Highway 126 ("SR-126") adjacent to the Project site, generally shown on *Figure 1, Village Phasing Plan.*

2. **WRP.** Los Angeles County approved the NRSP, and, as an individual project, the WRP development. The Regional Board adopted Waste Discharge Requirements for the Newhall Ranch Sanitation District (Order No. R4-2007-0046) effective October 27, 2007. The development of the WRP includes buried

soil cement flood protection along the Santa Clara River and involves filling of two on-site minor tributary drainages as further described below.

3. **Utility Corridor.** The Los Angeles County approved subdivision maps for both the Landmark Village and Mission Village tracts, described above, including the primary electrical, sewer, water, gas and communication lines serving the NRSP area that will be installed in a utility corridor generally located parallel to the south side of SR-126 and north of the Santa Clara River. The corridor will extend approximately three miles between Castaic Creek to the east and the WRP to the west, and will be approximately 100 feet wide. The corridor will cross several tributaries to the Santa Clara River, including (from east to west) Castaic Creek, Chiquito Canyon, Mid-Martinez Canyon, San Martinez Canyon, and Off-Haul Canyon as shown on *Figure 3, Modified, Converted, and Preserved Tributary Drainages*.

Trenching or where necessary, directional boring, will be used to install utility lines across the tributaries, and a 30 to 50-foot wide construction corridor will be required. Utility lines across watercourses will be located below scour depth and weighted or cemented in place, where appropriate, or co-located with bed stabilization features that provide scour protection. Following completion of construction activities, temporary impact areas will be restored to channel grade and re-vegetated with native riparian and upland species as appropriate.

Permanent access for the maintenance of utilities will be provided outside the limits of the streambed and associated habitats.

Buried soil cement or geofabric (turf reinforcement mat or other suitable non-degradable erosion material) bank protection will be provided along the utility corridor route. Approximately 4,300 linear feet of geofabric bank protection, designed to be planted with native vegetation, will be installed between the San Martinez Grande Canyon and Chiquito Canyon river confluences. Due to the relatively large width of the Santa Clara River in this area, the upland terraces along the north bank, are remote from high velocity flood flows, and therefore, not subject to riverbed geomorphological changes and excessive bank erosion forces. Based on the low velocity of flow expected in this area, the utility corridor bank will be protected with a vegetation covered geotextile fabric instead of buried soil cement. For the remaining approximately 3,130 linear feet of the utility corridor downstream of the San Martinez Grande confluence, the flood flow velocities necessitate armored bank lining flood protection. From the available methods of armoring stream banks for flood protection, buried soil cement has been selected as the environmentally preferred alternative for the following reasons: it allows complete soil covering of the hard structure; establishment of native vegetation on the soil cover; it does not require routine maintenance or vegetation clearing; it uses onsite soil materials for construction; and, in the event the soil cement becomes exposed, it has the appearance of an un-

vegetated natural river bank. The respective areas of bank protection are shown on *Figure 2, Santa Clara River Major Features.*

4. **WRP Outfall.** An effluent outfall pipeline approximately 30 inches in diameter will be constructed from the WRP, through bank stabilization, to an energy dissipater and pilot channel within the bed of the Santa Clara River. The approved WRP is to be located on the south side of SR-126, adjacent to the Santa Clara River and near the Los Angeles County/Ventura County jurisdictional line, and will be constructed on agricultural and other previously disturbed land.

   The outfall pipe will terminate on the river-side of proposed bank stabilization, similar to a typical storm drain outfall. An energy dissipater will be provided at the pipe outlet to minimize erosion-related impacts, with a narrow pilot channel formed in the riverbed to direct the discharge out to the active flow channel. An adjacent walkway will be used to conduct discharge inspections and to obtain water samples required under the NPDES permit for the WRP. The pilot channel will be excavated and lined with either concrete, gunite, turf reinforcement mat, rock, or if velocities are low enough, compacted soil. The channel and walkway will be maintained periodically to restore functions lost due to storm damage, vegetative growth, or soil erosion from WRP discharge. Maintenance will be limited to hand cutting vegetation along the path, maintaining the outlet and energy dissipater, and restoration of the functions of the pilot channel.

5. **Project Grading.** The WRP and utility corridor will result in approximately 78% of the area, or approximately 130 acres, being graded, including 97 acres for development and 33 acres of revegetated open space.

6. **SR 126 Bridge and Culvert Widening.** The RMDP indicates that three existing bridge/culvert road crossings along SR-126 will be widened by the California Department of Transportation to accommodate increased traffic resulting from the build out of the NRSP area. The SR 126 projects will be subject to project specific CEQA and NEPA review.

   The Castaic Creek Bridge will be widened from six to eight lanes and the San Martinez Grande Bridge will be widened from four to six lanes. The Chiquito Canyon culvert will be widened from four to six lanes. Depending on California Department of Transportation final design decisions on the SR 126/Chiquito Canyon interchange, the culvert may be revised to include three independent bridge decks and a separate trail bridge. The proposed extension of the existing culvert and bridge decks, piers and channel scour protection will incorporate design guidelines to minimize the alteration of existing hydrologic conditions, or cause negative affects upstream or downstream of the project. Water quality control of roadway runoff must meet applicable California Department of Transportation requirements.

7. **Water Resources Affected by the Project.**

Utility Corridor and WRP. The utility corridor and WRP site will be located predominately outside of waters of the United States, however, the construction of the corridor and WRP site and their associated bank protection will result in temporary and permanent impacts to waters of the United States, including wetland and non-wetland waters of the United States in the Santa Clara River, and non-wetland waters in two minor tributaries. Impacts resulting from the construction of the utility corridor and WRP are summarized on Tables 3 and 4.

Santa Clara River. The approximately 7,430 linear feet of soil cement flood and erosion protection related to the utility corridor and WRP site directly impacts the Santa Clara River. Impacts include 1.81 acres of permanent impact to waters of the United States, including wetlands, and 3.35 acres of temporary impact to waters of the United States. Of these impacts, 1.37 acres of the permanent impacts and 2.36 acres of the temporary impacts are to wetlands.

Minor Tributaries. In addition to impacts in the Santa Clara River, the utility corridor and WRP site will result in permanent impacts to 1.53 acres of waters of the United States that are provided by minor tributaries located on the WRP project site as shown on *Figure 3, Modified, Converted, and Preserved Tributary Drainages*. No temporary or permanent impacts to wetland waters will occur in the minor tributaries. Impacts to the minor tributaries are described below and summarized on Table 4.

<u>Mid-Martinez Grande Canyon, and Off-Haul Canyon.</u> These tributaries will be converted to buried storm drains in their entirety to accommodate the utility corridor and WRP. The entire lengths of the following drainages within the Utility Corridor and WRP project area will be filled: approximately 550 feet of Mid-Martinez Grande Canyon, consisting of 0.12 acres of waters of the United States; and approximately 450 feet of Off-Haul Canyon, consisting of 0.70 acres of waters.

WRP Outfall. The WRP outfall pipe and associated energy dissipater and pilot channel into the bed of the Santa Clara River will be constructed in a river terrace, outside of waters of the United States.

SR 126 Bridge and Culvert Widening. Temporary and permanent impacts to waters of the United States resulting from the construction of improvements to SR-126 are summarized on Tables 3 and 4. Due to the public safety and protection of property issues that could occur should a culvert or bridge become obstructed during high-flow events, extensive maintenance may be required at these facility locations. The California Department of Transportation will conduct the maintenance and will require separate permitting for activities impacting waters of the United States. Proposed maintenance measures include visual inspections, debris removal, vegetation clearing, and pier wall or culvert inlet/outlet headwall repair, all of which would occur within the temporary impact zone required for the original structure construction.

E.4 HOMESTEAD SOUTH VILLAGE

1. **Proposed NRSP Village Development.** The tentative tract map for the Homestead South Village portion of the Newhall Ranch master planned community has not been submitted to Los Angeles County for subdivision approval, and therefore detailed land use planning is not available for this planning area nor has the project-level EIR for the Homestead South Village been completed. Under the RMDP, a land use plan consistent with the NRSP was used in the impacts analysis. Under the RMDP, Homestead South Village will be developed on approximately 1,635 acres located in the central portion of the NRSP site. The Homestead South Village Project site is generally located south of the Santa Clara River, west of the Mission Village Project site and north of the Potrero Village site. A small portion of the Homestead South Village Project site will be located north of the River and south of SR-126. Development proposed for the Homestead South Village includes a mix of housing types; mixed-use/commercial facilities; open space and recreation facilities; and infrastructure uses (*e.g.* parks, high school and elementary school, utilities, roads, etc.).

   Residential development will occupy approximately 487 acres of the Homestead South Village Project site. School, park, open space, recreation and public service uses will occupy approximately 1,238 acres, and roads will occupy approximately 90 acres.

   Project Grading. The Homestead South Village Project will result in approximately 25 million cubic yards of grading in a balanced cut-fill grading operation (25 million cubic yards of cut and 25 cubic yards of fill). Approximately 64% of the Homestead South Village area, or approximately 1,126 acres, will be graded, including 724 acres for the development and 402 acres of revegetated open space.

2. **Waters Affected by the Project.** There are approximately 193.73 acres of waters of the United States within the Homestead South Village Project site, including 179.78 acres of waters of in the Santa Clara River and 13.95 acres of waters within the on-site tributary drainages. Of the 179.78 acres of waters of the United States within the Santa Clara River mainstem, the Homestead South Village Project will result in permanent impacts to 1.16 acres. Of the 13.95 acres of waters of the United States located within the on-site tributary drainages, the Homestead South Village Project will result in 2.99 acres of permanent impacts.

   Of the waters of the United States within the Homestead South Village Project site, there are approximately 108.09 acres of wetland waters in the Santa Clara River. There are no wetland waters in the on-site tributary drainages. Of the 108.09 acres of wetlands within the Santa Clara River mainstem, the Project will avoid permanent impacts to 98.28 acres and result in permanent impacts to 1.16 acres. Additional information about impacts to waters of the United States provided by the Santa Clara River and tributary drainages follows.

3. **Santa Clara River – Proposed Infrastructure and Impacts.** Infrastructure to be provided for the Homestead South Village Project includes the Long Canyon Bridge and approximately 6,070 linear feet of soil cement bank stabilization along the south bank of the Santa Clara River. Construction of the Project will also require the use of a temporary haul road across the River and the implementation of habitat restoration activities. These project-related actions will result in 1.16 acres of permanent impacts and 2.49 acres of temporary impacts to waters of the United States within the river. The Homestead South Village Project also includes the installation of six stormwater drainage outfalls that will discharge to the Santa Clara River, however, those facilities will not result in impacts to waters of the United States. Impacts to the Santa Clara River associated with the Homestead South Village Project are summarized in Table 3.

4. **Tributaries – Proposed Features and Impacts**

Long Canyon. The Homestead South Village Project will result in 5.23 acres of permanent impacts and 0.01 acres of temporary impacts to waters of the United States in Long Canyon. No impacts to wetland waters will occur in the Long Canyon drainage.

Approximately 8,742 feet of Long Canyon drainage that is currently unstable and subject to erosion and head cutting will be permanently impacted by filling, with the area regraded to accommodate a channel with grade control structures and four road crossing culverts within the new channel. In addition, approximately 961 feet of creek bed associated with the southern fork of Long Canyon will be converted to buried storm drain. Permanent impacts to waters resulting from modifications to the creek channel are summarized in Table 6. The design of a typical grade control structure is illustrated on *Figure 4, Lion Canyon Detail*, and as previously described for Lion Canyon above.

The re-graded and reconstructed Long Canyon drainage will provide approximately 23.4 acres of waters of the United States mitigation area, and approximately 40.7 additional acres of California Department of Fish and Game Streambed Alteration Agreement mitigation capacity within the resulting bed and bank. These post-development areas are indicated on *Figure 5, Long Canyon Detail*, and described in further detail in the RMDP Biological Mitigation Measure (BIO-2) Plan included as **Attachment 4.**

Lion Canyon West Fork. The Homestead South Village Project and the Mission Village Project tract map boundaries have the mainstem of Lion Canyon drainage on their border, and for purposes of the project description, all impacts associated with the stabilization of the Lion Canyon mainstem have been incorporated into the Mission Village description. The Homestead South Village Project will result in 2.07 acres of permanent impacts in the west fork of Lion Canyon as shown on *Figure 4, Lion Canyon Detail.* No impacts to wetland waters will occur in the Lion Canyon drainage. The west fork of the Lion Canyon drainage within the Homestead South Village tract will be permanently impacted by converting

approximately 3,500 feet of the existing creek channel, consisting of 2.07 acres of waters of the United States, to buried storm drain. There are no temporary impacts to Lion Canyon within the Homestead South Village project. Permanent impacts to waters resulting from modifications to the creek channel are summarized in Table 5.

Minor Tributaries. The Homestead South Village Project will result in permanent impacts to 0.92 acres of waters of the United States provided by minor tributaries located within the Project area. No impacts to wetland waters will occur in the minor tributaries. Impacts to the minor tributaries are described below and summarized on Table 4.

Humble Canyon, Unnamed Canyon B, and Unnamed Canyon C. Portions of these tributaries will be converted to buried storm drains to accommodate proposed development. A small portion of Humble Canyon will be filled, with approximately 421 feet converted to buried storm drain, consisting of 0.14 acres of waters of the United States. Approximately 5,116 feet of the remaining drainage, including of 1.77 acres of the drainage headwaters, will be preserved. The headwater of Unnamed Canyon B will be filled, with approximately 1,004 feet of the drainage converted to buried storm drain, with resulting permanent impact to 0.45 acres of waters of the United States. Approximately 568 feet of the lower drainage, downstream to the Santa Clara River confluence, containing 0.27 acres of waters, will be preserved. Similarly, approximately 402 feet of Unnamed Canyon C will be converted to storm drain, resulting in 0.18 acres of permanent impact to waters of the United States, with approximately 869 feet of drainage, consisting of 0.49 acres of waters of the United States, being preserved downstream to the confluence with the Santa Clara River.

Ayers Canyon. A road culvert will be installed in a portion of this on-site tributary, which includes 0.15 acres of waters of the United States. Ayers Canyon remains preserved except for the culvert crossing, with approximately 2,363 feet of drainage remaining, including 2.42 acres of waters of the United States preserved.

E.5 HOMESTEAD NORTH VILLAGE

1. **Project Characteristics.** The tentative tract map for the Homestead North Village portion of the RMDP has not been submitted to Los Angeles County for subdivision approval, and therefore detailed land use planning is not available for this planning area nor has the project-level EIR for Homestead North Village been completed. Under the RMDP, a land use plan consistent with the NRSP was used in the impacts analysis. The Homestead North Village portion of the RMDP will be developed on approximately 1,600 acres located in the northwestern portion of the NRSP area. The Homestead North Village site is generally located north of SR-126 and west of the Landmark Village Project site. Development proposed for the Homestead North Village Project includes a mix of housing types; mixed-

use/commercial facilities; open space and recreation facilities; and infrastructure uses (*e.g.* parks, utilities, roads, etc.).

Residential development will occupy approximately 295 acres of the Homestead North Village Project site, while mixed use/commercial uses will occupy approximately 77 acres. Park, open space, recreation and public service uses will occupy approximately 1,153 acres, and roads will occupy approximately 75 acres.

Project Grading. The Homestead North Village Project will result in approximately 13 million cubic yards of grading in a nearly balanced cut-fill grading operation (13 million cubic yards of cut and 12.5 million cubic yards of fill). Approximately 500,000 cubic yards of export are associated with non-RMDP Project development and improvements to SR-126 east of the project site. Approximately 48% of the Homestead North Village area, or approximately 762 acres, will be graded, including 465 acres for the development and 297 acres of revegetated open space.

2. **Waters Affected by the Project.** There are approximately 22.69 acres of waters of the United States in tributary drainages located within the Homestead North Village Project site. The tributaries on the Project site do not contain any wetland waters. The Project site does not include any waters of the United States associated with the Santa Clara River. The Homestead North Village Project will result in 11.74 acres of permanent impacts to waters of the United States. Additional information about impacts to the waters follows.

3. **Tributaries – Proposed Features and Impacts.**

Chiquito Canyon. There are 12.21 acres of waters of the United States in Chiquito Canyon on the Homestead North Village Project site. The Project will result in 4.70 acres of permanent impacts and 3.40 acres of temporary impacts to waters of the United States in Chiquito Canyon.

Portions of the Chiquito Canyon drainage that are currently unstable and subject to erosion and head cutting, will be permanently impacted by converting approximately 2,571 feet of existing creek channel, consisting of 0.84 acres of waters of the United States, to buried storm drain; the installation of three road crossing culverts; the installation of approximately 13,257 linear feet of bank stabilization along approximately 4,080 feet of the mainstem of the drainage; the installation of grade control structures; and by proposed development. Permanent impacts to waters of the United States resulting from modifications to the creek channel are summarized in Table 7.

Waters of the United States located in portions of the Chiquito Canyon drainage will be temporarily impacted by the creation of modified/restored soft bottom channels and the construction of grade control structures/debris basins. Temporary impacts to waters of the United States resulting from proposed modifications are described in Table 7. The design of a typical grade control

structure is illustrated on *Figure 4, Lion Canyon Detail*, and as previously described for Lion Canyon above.

Upon completion of stabilization and bank protection construction and restoration of disturbed areas, the Chiquito Canyon drainage will provide approximately 9.8 acres of waters of the United States mitigation area, and approximately 19.2 additional acres of California Department of Fish and Game Streambed Alteration Agreement mitigation capacity within the resulting bed and bank. These post-development areas are indicated on *Figure 6, Chiquito Canyon Detail*, and described in further detail in the RMDP Biological Mitigation Measure (BIO-2) Plan included as **Attachment 4.**

San Martinez Grande Canyon. There are 2.55 acres of waters of the United States in San Martinez Grande Canyon on the Homestead North Village Project site. The Project will result in 0.22 acres of permanent impacts and 1.06 acres of temporary impacts to waters of the United States in San Martinez Grande Canyon. Portions of the San Martinez Grande Canyon drainage that are currently unstable and subject to erosion and head cutting, will be permanently and temporarily impacted by installing approximately 7,307 linear feet of bank stabilization; the installation of one roadway bridge and one road culvert; and the installation of grade control structures. Permanent and temporary impacts to waters of the United States in San Martinez Grande Canyon are summarized in Table 8. The design of a typical grade control structure is illustrated on *Figure 4, Lion Canyon Detail*, and as previously described for Lion Canyon above.

Upon completion of stabilization and bank protection construction and restoration of disturbed areas, the San Martinez Grande Canyon drainage will provide approximately 6.8 acres of waters of the United States mitigation area, and approximately 11.1 additional acres of California Department of Fish and Game Streambed Alteration Agreement mitigation capacity within the resulting bed and bank. These post-development areas are indicated on *Figure 7, San Martinez Grande Canyon Detail*, and described in further detail in the RMDP Biological Mitigation Measure (BIO-2) Plan included as **Attachment 4.**

Minor Tributaries. The minor tributaries located on the Homestead North Village Project site provide a total of 7.92 acres of waters of the United States. No wetland waters are provided in the on-site minor tributaries. The Homestead North Village Project will result in permanent impacts to 6.82 acres of waters of the United States. The project will not result in any temporary impacts to waters of the United States. Impacts to the minor tributaries are described below and summarized on Table 4.

<u>Homestead Canyon, and Mid-Martinez Canyon.</u> Approximately 609 feet of Homestead Canyon drainage, consisting of 0.22 acres of waters of the United States, will be converted to buried storm drains to accommodate proposed development. The entire Mid-Martinez Canyon drainage within the Homestead

North Village project site will be filled, with approximately 3,796 feet converted to buried storm drain, consisting of 1.84 acres of waters of the United States.

Off-Haul Canyon. A substantial portion of Off-Haul Canyon will be converted to buried storm drains to accommodate proposed development. Approximately 5,314 feet of the drainage will be converted to buried storm drain, with resulting permanent impact to 4.76 acres to waters of the United States. Approximately 3,014 feet of the headwaters of Off-Haul Canyon, including 0.32 acres of waters of the United States within the tract boundary, will be preserved.

Unnamed Canyon A. Approximately 1,293 feet of Unnamed Canyon A drainage, consisting of 0.78 acres of waters of the United States, will be preserved, with no impacts from the project.

E.6 POTRERO VILLAGE

1. **Project Characteristics.** The tentative tract map for the Potrero Village portion of the RMDP has not been submitted to Los Angeles County for subdivision approval, and therefore detailed land use planning is not available for this planning area nor has the project-level EIR for Potrero been completed. Under the RMDP, a land use plan consistent with the NRSP was used in the impacts analysis. The Potrero Village portion of the Newhall Ranch master planned community will be developed on 3,000 acres located south of SR-126 and north of the High Country open space area that is to be established on the NRSP area. Development proposed for the Potrero Village Project includes a mix of housing types; mixed-use/commercial facilities; open space and golf and recreation facilities; elementary school; visitor service center in the High Country; and infrastructure uses (*e.g.* parks, utilities, roads, etc.).

2. Residential development will occupy approximately 900 acres of the Potrero Village Project site, while commercial uses will occupy approximately 38 acres. School, park, open space, recreation and public service uses will occupy approximately 1,550 acres, and roads will occupy approximately 104 acres.

Project Grading. The Potrero Village Project will result in approximately 26 million cubic yards of grading in a balanced cut-fill grading operation (26 million cubic yards of cut and 26 million cubic yards of fill). Approximately 57% of the Potrero Village project area, or approximately 1,703 acres, will be graded, including 1,275 acres for the development and 427 acres of revegetated open space. The remaining area will be preserved as natural open space.

Waters Affected by the Project. There are approximately 164.21 acres of waters of the United States within the Potrero Village Project site, including 123.71 acres of waters of the United States in the Santa Clara River and 40.50 acres of waters of the United States within the on-site tributary drainages. The Potrero Village project does not impact the 114.35 acres of waters of the United States within the Santa Clara River mainstem other than impacts that may result from the

restoration of an existing river crossing, which will occur after all construction has been completed. Of the 40.50 acres of waters of the United States located within the on-site tributary drainages, the Potrero Village Project will result in 2.06 acres of permanent impacts.

Of the waters of the United States within the Potrero Village Project site, there are approximately 102.59 acres of wetland waters in the Santa Clara River. There are 7.28 acres of wetland waters within the Potrero Canyon drainage, primarily consisting of cis-montane alkali marsh wetlands. The project does not impact any of the 95.31 acres of wetlands within the Santa Clara River mainstem. Within Potrero Canyon drainage, there are 0.49 acres of permanent impacts, and 1.61 acres of temporary impacts, to wetlands associated with grade control structures, bank protection and road crossings. Additional information about impacts to waters of the United States provided by the Santa Clara River and tributary drainages follows.

3. Tributaries – Proposed Features and Impacts

Potrero Canyon. Portions of the Potrero Canyon drainage will be permanently impacted by the construction of three road crossing culverts and one roadway bridge; creek channel bed stabilization of approximately 13,743 feet of the mainstem of Potrero drainage, including approximately 31,097 linear feet of bank stabilization within the reach; the installation of no more than 60 grade control structures; a water quality control basin and debris basins; and the creation of manufactured open space areas. Permanent impacts to waters of the United States in Potrero Canyon are summarized in Table 9.

Waters of the United States located in portions of the Potrero Canyon drainage that are currently unstable and subject to erosion and head cutting, will also be temporarily impacted by proposed road culverts and bridge, bank stabilization, and the installation of grade control structures. Temporary impacts to waters of the United States resulting from proposed modifications are described in Table 9. The design of a grade control structure specific to Potrero Canyon is illustrated on *Figure 8, Potrero Canyon Detail.* The specific design for Potrero consists of a sill, a drop, and a stilling pool pursuant to the Potrero Creek Stream Stabilization Criteria, as required by the Corps permit. Stream stabilization measures used in Potrero Creek will conform to the following design criteria.

1. Not more than 60 Step-Pool Grade Control Structures (GCS) shall be located along the Potrero Creek drainage within the RMDP project area.
2. Height: The average height of the GCS (the elevation of the drop stabilized by each structure) shall be 4 feet, with no structures greater than 5 feet high and a target height of 3 feet.
3. The grade control structures shall be located to minimize impacts or to avoid localized aquatic vegetation or habitats, stabilize existing headcuts, and be sited in conjunction with road crossings. The

preferred grade control design shall be a 3-foot-high step pool structure and constructed using ungrouted boulders.

4. Neither grouted riprap nor soil cement will be used in the drop structures to avoid the introduction of cement based materials into sensitive habitats within Potrero Canyon drainage.

The Potrero Canyon drainage will provide approximately 14.0 acres of waters of the United States mitigation area, and approximately 84.3 additional acres of California Department of Fish and Game Streambed Alteration Agreement mitigation capacity within the resulting bed and bank. These post-development areas are indicated on *Figure 8, Potrero Canyon Detail.*

Salt Canyon. The Potrero Village Project will result in 0.22 acres of permanent impacts and 7.28 acres of temporary impacts to waters of the United States in Salt Canyon. Permanent impacts will result from the construction of approximately 1,841 linear feet of bank stabilization along the eastern bank of Salt Creek for flood protection of the High Country Visitor Serving Center development area. Temporary impacts to waters will result from restoration activities along approximately 7,392 linear feet of Salt Creek. Of the 7.28 acres of temporary impacts, 1.14 acres of impact will occur in wetland waters.

F. **RMDP Facility Maintenance**

1. **Santa Clara River and Tributary Feature Maintenance.** All infrastructure facilities associated with the RMDP Project will be subject to periodic maintenance activities, with visual inspection being the least invasive activity. The RMDP Maintenance Manual included as **Attachment 2**, provides detailed requirements for the operation and maintenance of the facilities. A summary of proposed maintenance activities is provided below.

2. **Bridges and Road Crossings**. Vegetation and sediment will only be removed to maintain minimum vertical clearance beneath bridge and adequate water conveyance through culverts in the area approximately 25 feet upstream and 25 feet downstream of the structure. Impacts from maintenance will be in the same footprint as the original construction impacts. Work areas will be restored to pre-maintenance conditions in accordance with a restoration plan.

3. **Bank Stabilization**. Newhall Land or the Los Angeles County Flood Control District (LACFCD), or other responsible entity, will perform periodic visual inspections of the buried soil cement bank protection. Bank stabilization will be repaired as needed to maintain structural integrity. Work areas will be limited to the repair site and a 30-foot radius around the work area. Impacts from maintenance will be in the same footprint as the original construction impacts and will not result in any additional fill of waters of the United States. Work areas will be restored to pre-maintenance conditions in accordance with a restoration plan.

4. **Storm Drains**. Newhall Land or LACFCD, or other responsible entity will remove outfall sediment as needed using light equipment or hand crews to create a swale up to 75 feet long and 10 feet wide to prevent obstruction of flow. Maintenance will occur in the same footprint as the original permanent construction impacts. Each outfall could result in the periodic dredging of approximately 150 cubic yards of sediment, which if managed on-site will be spread at the maintenance site outside of jurisdictional areas. Placement of fill in waters of the United States is not anticipated and would require additional permitting.

5. **Drainages Modified and Restored**. Waters of the United States created in Lion Canyon will be allowed to function as a natural stream course environment, with no routine maintenance anticipated. However, pursuant to the provisions of a required Geomorphology Monitoring and Management Plan (described in Part 1, Section 3.0, Provision No. 27 below), Newhall Land or LACFCD, or other responsible entity will conduct routine inspections to ensure proper function of the structures. If the specified design standards are not achieved, supplemental activities will be required, including: removal or placement of sediment to modify the channel bed invert; modification of grade control structures; or augmentation of riparian vegetation. These actions will be taken within the original construction impact footprint.

6. **Debris Basins**. Newhall Land or LACFCD, or other responsible entity will conduct periodic removal of sediment and woody vegetation to maintain basin capacity and function. Heavy equipment, light equipment and/or hand crews may be used. In most locations, the basins will not be located within waters of the United States, however, where located in waters of the United States, impacts from maintenance will be in the same footprint as the original construction impacts. Sediment that is periodically removed will be directed to a legal point of disposal (e.g., landfill, sediment disposal site, or other beneficial re-use). Sediments will not be discharged into jurisdictional waters.

7. **Grade Control Structures**. Grade control and step pool structures will be primarily self-maintaining with a limited need for sediment removal and vegetation control. Pursuant to the provisions of a required Geomorphology Monitoring and Management Plan (described in Part 1, Section 3.0, Provision No. 27 below), Newhall Land or LACFCD, or other responsible entity will conduct routine inspections to ensure proper function of the structures. Sediment will be removed when a structure does not function properly or causes nuisance conditions.

8. **Water Quality/Detention Basins**. Newhall Land or LACFCD, or other responsible entity will conduct routine maintenance including removal of trash and debris; pruning and/or removal of large shrubs or trees that interfere with

basin operation subject to bird nesting requirements; removal of invasive vegetation; removal of sediment buildup exceeding 50% of forebay capacity; and removal of sediment from facility when it exceeds a depth of six inches. Water quality basins are generally located in upland locations that are not waters of the United States locations, and maintenance will not result in additional impacts to waters of the United States. Although the basins are intended to treat runoff from developed areas and should not generate substantial quantities of sediment, periodic maintenance may require sediment removal from the basin forebay. Sediment will be removed and directed to a legal point of disposal or beneficial reuse. In addition, to maintain adequate infiltration functions, reconstruction of the basin subdrain may occur on an infrequent basis.

G. OTHER CONSIDERATIONS

This Order sets forth waste discharge requirements (WDRs) and provides Clean Water Act section 401 water quality certification pursuant to Water Code section 13263. The Regional Board considers WDRs necessary to adequately address impacts and mitigation to beneficial uses of waters of the State from this Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over the life of the RMDP.

1. The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "...long-term net gain in the quantity, quality, and permanence of wetland acreage and values...." Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State." Section 13142.5 of the California Water Code requires that the "[h]ighest priority shall be given to improving or eliminating discharges that adversely affect...wetlands, estuaries, and other biologically sensitive areas."

2. On January 27, 2005, the Regional Board adopted Resolution No. 2005-002 regarding the Regional Board's regulation of hydromodification. This policy reiterates the Regional Board's existing authority to regulate hydromodification within the Los Angeles Region, and expresses the intent of the Board to evaluate the need for and to develop as appropriate new policies or other tools to control adverse impacts from hydromodification on the water quality and beneficial uses of water courses in the Los Angeles Region. The alteration away from a natural state of stream flows or the beds or banks of rivers, streams, or creeks, including ephemeral washes, which results in hydrogeomorphic changes, is generally referred to in this resolution as a hydromodification. Resolution No. 2005-002 represented an initial step in the process of first, heightening awareness about the potential impacts of hydromodification on water quality and beneficial uses and evaluating existing laws and regulations and the methods employed by Regional Board staff when reviewing proposed hydromodification projects and, second,

strengthening, if necessary, controls and policies governing hydromodification that negatively affect water quality and beneficial uses.

3. Pursuant to Water Code section 13263(g):

   a. "No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights."

4. As set forth in Water Code section 13263(e), the Regional Board will periodically review this Order. The Executive Officer will periodically provide a report to the Regional Board at least every five years and, as necessary, at other intervals per the pace of village development. The Executive Officer will consider new environmental analyses under CEQA, changed environmental conditions and new information of environmental contamination or water quality impairment. The Regional Board may revise the requirements of this Order as necessary to protect water quality, pursuant to CWC section 13263(e) or to implement any new or revised water quality standards and implementation plans or policies adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or Section 303 of the Clean Water Act.

5. This Project is filed with the Regional Board under WDR Order No. xxx and 401 file number **11-168 WDR**.

6. The Regional Board has notified Newhall Land and Farming and other interested agencies and persons of its intent to prescribe WDRs for this discharge.

7. A tentative Order was released for public comment on March 9, 2012. Written comments were accepted until 5:00 p.m. on April 20, 2012.

8. The Board, in public meetings on June 7, 2012, August 7, 2012, and September 14, 2012 heard and considered all comments pertaining to the discharge.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT

1. The California Environmental Quality Act ("CEQA"), Pub. Res. Code §21000 et. seq., requires public agencies when approving or carrying out projects that could impact the quality of the environment to consider potential environmental impacts of their actions. Where a project may be carried out or approved by more than one public agency, one public agency – the lead agency - will be responsible for preparing an environmental impact report or negative declaration for the project. Other agencies are considered responsible agencies. As described in this Order, the Los Angeles County Board of Supervisors is the lead state agency for purposes of CEQA to approve the Newhall Ranch land use activities. The CDFG

is the lead state agency for purposes of CEQA for approval of activities subject to the Fish and Game Code. The Corps is the lead federal agency for purposes of NEPA for approval of the Clean Water Act section 404 permit. The Regional Board is a responsible agency for purposes of CEQA.

2. The project subject to this Order has been subject to significant review under CEQA. The Los Angeles County Board of Supervisors approved the Newhall Ranch Specific Plan, and certified the Newhall Ranch Specific Plan Program Environmental Impact Report (EIR), on May 27, 2003. At the same time, the Board of Supervisors approved the Newhall Ranch Specific Plan Resource Management Plan (RMP). The RMP set forth, at a conceptual level, mitigation and management standards for sensitive biological resources located within the boundary of the approved NRSP.

3. The Corps and CDFG prepared a Joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The CDFG was the lead agency under CEQA and the Corps was the lead agency under NEPA, for the purpose of analyzing all environmental effects of the RMDP (State Clearinghouse No. 2000011020). CDFG approved the final EIS/EIR on December 3, 2010, and the Corps approved the final EIS/EIR on August 31, 2011.

4. The final EIS/EIR for the RMDP identified significant impacts to the environment including permanent dredge and fill impacts to 66.3 acres of waters of the United States and temporary dredge and fill impacts to 32.2 acres of waters of the United States and water quality impacts. The final EIS/EIR identified mitigation measures to reduce water quality impacts to "less than significant" and compensatory mitigation that includes created or restored aquatic or riparian habitat to eliminate or minimize dredge and fill impacts.

5. The Regional Board is a responsible agency under CEQA for the RMDP and has considered the environmental documentation of the lead agency, CDFG. Regional Board submitted comments on the EIS/EIR to the Corps and CDFG on August 25, 2009 and August 3, 2010, which were considered in the final EIS/EIR.

6. The final EIS/EIR identified potential significant impacts to 'Water Quality.' The requirements of this Order; the requirements of the Los Angeles County MS4 permit including the Stormwater Management Program; and the requirements of the NPDES permit and Waste Discharge Requirements for the Newhall Ranch Sanitation District's WRP, incorporate mitigation measures identified in the final EIS/EIR to reduce impacts to water quality to less than significant.

7. The final EIS/EIR for the RMDP identified potential significant impacts to 'Jurisdictional Waters and Streams.' The requirements of this Order; the requirements the Corps Permit; and the requirements of the CDFG MSAA, incorporate mitigation measures identified in the final EIS/EIR to reduce impacts to jurisdictional waters and streams to less than significant.

8. CDFG made a Statement of Overriding Considerations for the final EIS/EIR for impacts to air quality; noise; agricultural resources; land use; visual resources; hazards, hazardous materials, and public safety; and solid waste, finding that the project's benefit is substantial and overrides the unavoidable impacts.

9. The EIR for Landmark Village was approved by the County of Los Angeles Department of Regional Planning on October 4, 2011. The Regional Board is a responsible agency under CEQA for the Landmark Village EIR and has considered the environmental documentation of the lead agency. Regional Board staff commented on the draft EIR on January 22, 2007 and the comments were considered in the final EIR.

10. The EIR for Landmark Village identified potential significant impacts to 'Water Quality' and 'Floodplain Modification' and identified mitigation measures to reduce the impacts to less than significant. The requirements of this Order; the requirements of the Los Angeles County MS4 permit including the Stormwater Management Program; and the requirements of the NPDES permit and Waste Discharge Requirements for the Newhall Ranch Sanitation District's WRP, incorporate the mitigation measures identified in the final EIS/EIR to reduce impacts to water quality to less than significant. The requirements of this Order; the requirements the Corps Permit; and the requirements of the CDFG MSAA, incorporate mitigation measures identified in the final EIS/EIR to reduce impacts to floodplain modification to less than significant.

11. The County of Los Angeles made a Statement of Overriding Considerations for the EIR for Landmark Village for impacts to biota, visual qualities, noise, air quality; agricultural resources; and solid waste services finding that the project's benefit is substantial and overrides the unavoidable impacts.

12. The EIR for Mission Village was certified by the County of Los Angeles Department of Regional Planning on October 25, 2011 _and final map conditions were issued on May 15, 2012.. The Regional Board is a responsible agency under CEQA for the Mission Village EIR and has considered the environmental documentation of the lead agency. Regional Board staff commented on the draft EIR on January 4, 2011 and the comments were considered in the final EIR.

13. The EIR for Mission Village identified potential significant impacts to 'Water Quality' and 'Floodplain Modification' and identified mitigation measures to reduce the impacts to less than significant. The requirements of this Order; the requirements of the Los Angeles County MS4 permit including the Stormwater Management Program; and the requirements of the NPDES permit and Waste Discharge Requirements for the Newhall Ranch Sanitation District's WRP, incorporate the mitigation measures identified in the final EIS/EIR to reduce impacts to water quality to less than significant. The requirements of this Order; the requirements the Corps Permit; and the requirements of the CDFG MSAA,

incorporate mitigation measures identified in the final EIS/EIR to reduce impacts to floodplain modification to less than significant.

14. The County of Los Angeles made a Statement of Overriding Considerations for the EIR for Mission Village for impacts to visual qualities, air quality; agricultural resources; and solid waste services finding that the project's benefit is substantial and overrides the unavoidable impacts.

15. The County of Los Angeles will be required to conduct additional environmental analyses under CEQA for additional villages or phases of the project. The Regional Board may revise this Order, including the addition of mitigation measures, after consideration of the environmental analysis for those future projects to assure protection of water quality.

16. This Order includes the requirement for a monitoring and reporting program to assure compliance with the mitigation measures and other terms of this Order. In addition, as set forth in the Attachments, which are incorporated by reference into this Order, this Order requires mitigation measures and compensatory mitigation to reduce the water quality impacts to "less than significant" and to require sufficient compensatory mitigation to replace waters impacted by dredge and fill.

IT IS HEREBY ORDERED that Newhall Land, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder and for certification that the proposed discharges will comply with the Clean Water Act and other applicable water quality standards, pursuant to the Regional Board's authority under Water Code sections 13263 and 13267 and Clean Water Act section 401, 33 U.S.C. § 1341, shall comply with the following.

1.0 **Standard Conditions:** Pursuant to section 3860, Title 23, California Code of Regulations (23 CCR), the following three standard conditions shall apply to the Project:

a. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and 23 CCR section 3867 et seq.;

b. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought;

c. This Order is conditioned upon total payment of any fee required pursuant to 23 CCR division 3, chapter 28 and owed by Newhall Land.

2.0 Prohibitions

1. Fueling, lubrication, maintenance, operation, and storage of vehicles and equipment shall not result in a discharge or a threatened discharge to waters of the State. At no time shall Newhall Land use any vehicle or equipment which leaks any substance that may impact water quality. Staging and storage areas for vehicles and equipment shall be located outside of waters of the State.

2. No construction material, spoils, debris, or any other substances associated with this project that may adversely impact water quality, shall be located in a manner which may result in a discharge or a threatened discharge to waters of the State. Designated spoil and waste areas shall be visually marked prior to any excavation and/or construction activity, and storage of the materials shall be confined to these areas.

3. All waste or dredged material removed shall be relocated to a legal point of disposal if applicable. A legal point of disposal is defined as one for which Waste Discharge Requirements have been established by a California Regional Water Quality Control Board, and which is in full compliance therewith.

4. The discharge shall not: a) degrade surface water communities and populations including vertebrate, invertebrate, and plant species; b) promote the breeding of mosquitoes, gnats, black flies, midges, or other pests; c) alter the color, create visual contrast with the natural appearance, nor cause aesthetically undesirable discoloration of the receiving waters; d) cause formation of sludge deposits; or e) adversely affect any designated beneficial uses, f) cause or contribute to trash or debris pollution.

5. Unauthorized non-storm water discharges into the MS4 system, the Santa Clara River or other waters of the State, are prohibited.

6. This Order does not authorize the discharge of waste by Newhall Land related to any activities other than those specifically described in this Order.

3.0 Conditions.

General Conditions:

1. **Compliance with Porter Cologne Water Quality Control Act.** Newhall Land shall comply with water quality objectives, prohibitions, and policies set forth in the *Water Quality Control Plan, Los Angeles Region (1994),* as amended.

Newhall Land shall implement all necessary control measures to prevent the degradation of water quality from the proposed project in order to maintain compliance with the Basin Plan (and water quality standards therein) and other implementation plans adopted or approved pursuant to the Porter Cologne Water Quality Control Act. Any discharge shall meet all effluent limitations and toxic and effluent standards established to comply with the applicable water quality objectives and water quality standards and other appropriate requirements, including the provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act.

2. **Water Quality Objectives.** Newhall Land shall not cause or contribute to exceedances of water quality objectives in the Basin Plan or water quality objectives set forth in the California Toxics Rules in the waters of the State and of the United States.

3. **Recycled Water.** In order to minimize the discharge of treated effluent to waters of the State and of the United States Newhall Land shall ensure that treated effluent from the Newhall Ranch WRP is used for irrigation and other appropriate purposes within the RMDP, consistent with Finding 20 of this Order. Newhall Land shall report to the Regional Board annually the volume of treated effluent from the Newhall Ranch WRP reused for such purposes.

4. **Compliance with Federal Permit Issued for RMDP**. Newhall Land shall conduct all activities in accordance with the terms and conditions of the Corps Section 404 Permit for the RMDP, Permit No. SPL-2003-01264-AOA, and with all specifications of the Newhall Ranch RMDP Final Mitigation and Monitoring Plan for Impacts to waters of the United States, or any subsequently approved plan.

5. **Compliance with CDFG Permit Issued for RMDP** Newhall Land shall conduct all activities in accordance with the terms and conditions of the MSAA issued by CDFG for the RMDP, Agreement No. 1600-2004-0016-R5.

Conditions associated with Construction Activities: The following terms shall be applicable to all activities conducted within the boundaries of the RMDP, including but not limited to, construction activities.

6. **Project Biologist**. Newhall Land shall utilize the services of a biologist with expertise in aquatic and terrestrial species known to the Santa Clara River within the RMDP site and expertise in riparian assessments, and who shall possess the requisite state and federal authorizations to conduct the surveys and monitoring activities described below. The biologist shall be available on site during construction or sediment and/or vegetation removal activities including during any vegetation clearing activities, including those activities conducted in debris/detention basins. The project biologist shall have the authority to stop the

work, as necessary. The project biologist shall be available upon request from this Regional Board staff for consultation within 24 hours of request for consultation.

7. **Restoration Biologist**. Newhall Land shall utilize the services of a restoration biologist with expertise in riparian assessments and habitat restoration during all construction or maintenance activities where clearing involves areas to be partially cleared or protected in place (i.e. some vegetation is to remain in the same reach or in an adjacent reach) and for monitoring/reporting on compensatory mitigation and restoration activities. The restoration biologist shall be available as necessary to ensure that all protected areas are marked properly and ensure that no vegetation outside the approved work area is removed. The restoration biologist shall have the authority to stop the work, as necessary. The restoration biologist shall be available upon request from this Regional Board staff for consultation within 24 hours of request for consultation.

8. **Measures During Construction**. In order to protect water quality during construction, Newhall Land shall comply with General NPDES Permit for Construction Stormwater Discharges (Order No. 2009-0009-DWQ; NPDES No. CAS000002 adopted September 2, 2009; effective July 1, 2010), as amended or reissued, or other legally applicable standard. Newhall Land shall implement BMPs during construction of the RMDP infrastructure improvements and NRSP build-out to prevent and/or reduce erosion and the transport of sediment and other potential pollutants from the project site. These BMPs shall be designed and implemented to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology (BAT/BCT). Any Stormwater Pollution Prevention Plan (SWPPP) prepared to comply with the Construction General Permit shall identify and apply proper construction, implementation, and maintenance of BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction sites during construction.

9. **WQTR.** Newhall Land will prepare and submit to the Executive Officer for review a Project Water Quality Technical Reports (WQTR) and Drainage Concept Report which addresses LID standards for each subsequent development area within the RMDP. Newhall Land shall implement the requirements of the approved WQTR and Drainage Concept Report in all construction and maintenance activities.

10. **Planning and Development (LID) Standards**. Each development area within the RMDP shall incorporate the following measures. Development areas within the RMDP site shall comply with all applicable regulatory requirements of the Los Angeles County MS4 Permit in place at the time of the preparation of the WQTR unless an equivalent requirement in this WDR is more stringent. Project design features shall be selected and sized to retain the volume of stormwater

runoff produced from a 1.1 inch storm event[3] (LID design volume) to reduce the percentage of Effective Impervious Area (EIA) to 5 percent or less of the total project area within the Newhall Ranch Specific Plan. When it has been demonstrated that 100 percent of the LID design volume cannot be feasibly[4] infiltrated, then biofiltration shall be provided for 1.5 times the portion of the LID design volume that is not retained. Runoff from all EIA shall be treated with effective treatment control measures that are selected to address the pollutants of concern and are sized to capture and treat 80 percent of the average annual runoff volume. Each Village-level project shall achieve the LID Performance Standard cumulatively, considering the retention volume and equivalent biofiltration volume[5] provided by the project itself and by all previous development phases within the RMDP area. The LID Performance Standard shall be implemented as follows:

Institutional, commercial, multi-family residential, recreation, and park land use parcels shall implement retention or biofiltration BMPs within the parcel footprint. Runoff from roofs, patios, and walkways in single family residential parcels shall be dispersed over landscaped areas to retain runoff. Runoff from the remaining developed area and that which is not retained within the parcel footprints shall flow through the storm drain system to the regional infiltration/ biofiltration facilities. Based on an assessment of feasibility, one of three BMP strategies shall be applied to each project (i.e. village) as follows:

a. If it is feasible to infiltrate all of the runoff produced from the 1.1 inch storm from the developed area (i.e., soil infiltration rates are at least 0.5 inches per hour, and no other technical infeasibility concerns exist), infiltration BMPs shall be used. Infiltration BMPs include bioretention (without an underdrain), permeable pavement, infiltration galleries, infiltration basins or trenches, or an equivalent infiltration BMP.

b. If it has been demonstrated in the Project WQTR and Drainage Concept Report that the BMP strategy of subsection (a), of this condition, is infeasible, and if the project has low soil infiltration rates (i.e., the soil infiltration rate is less than 0.5 inches per hour), but no other technical infeasibility concerns exist, bioinfiltration BMPs shall be used. Bioinfiltration facilities are similar to bioretention facilities with an underdrain, but they include storage below the underdrain to maximize the volume infiltrated. These facilities shall retain a portion of the runoff from the 1.1 inch design storm, then biofilter 1.5 times the remaining runoff from the 1.1 inch design storm.

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[3] The 85th percentile, 24-hour storm depth is equal to 1.1 inches as determined from the Los Angeles County 85th Percentile 24-hr Rainfall Isohyetal Map (February 2004)

[4] Feasibility shall be based on the approved Ventura County Technical Guidance Manual for Stormwater Quality Control Measures (7-13-2011)).

[5] Biofiltration volume shall be equated to retention volume at a ratio of 1.5 (biofiltration) to 1.0 (retention).

c. If it has been demonstrated in the Project WQTR and Drainage Concept Report that the BMP strategies of subsection (a). and (b), of this condition, are infeasible, , then biofiltration BMPs shall be used. These BMPs shall biofilter the runoff produced from the 1.5 times the 1.1 inch design storm.

Runoff from roadways shall be retained or biofiltered in retention or biofiltration BMPs sized to capture the design storm volume or flow, per the guidance in USEPA's Managing Wet Weather with Green Infrastructure: Green Streets.

No more than 5% of the total project area shall be treated using conventional treatment methods that address the pollutants of concern. Media filters (or equivalent BMPs that address the pollutants of concern) shall be sized to capture and treat 80% of the average annual runoff volume from the allowable EIA.

Regional facilities shall be implemented to infiltrate or biofilter the runoff volume from the 1.1 inch design storm volume that has not been retained or biofiltered within parcels, single family lots, or road right of ways. Additionally, regional facilities shall be designed to provide extended detention treatment for the additional runoff volume required to provide 80% capture and treatment of the average annual runoff volume for the tributary area to the regional facility per the Newhall Ranch Specific Plan Sub-Regional Stormwater Mitigation Plan treatment performance standard.

For each village-level project within the RMDP, Newhall Land shall implement hydromodification controls to prevent accelerated stream erosion and to protect stream habitat, as follows:

a. For discharges to the Santa Clara River, RMDP projects shall incorporate site design and LID BMPs per this LID Standard to limit impervious area and disconnect imperviousness to avoid and minimize hydromodification impacts.

b. For discharges from RMDP projects to the drainages tributary to the Santa Clara River, the erosion potential (Ep) of stormwater discharges from the Project shall be maintained within 20% of the target value[6] in the tributary drainages that will receive post-development flows. The target Ep shall consider changes in sediment supply. The hydromodification performance standard shall be met for all of the RMDP projects from the point of discharge to the tributary drainage channel downstream to the confluence of the tributary drainage with the Santa Clara River, and shall be achieved through on-site or in-stream controls, or a combination

[6] The target Ep value is 1 unless a more appropriate value is derived. The target Ep value shall match the long term cumulative sediment load transported in the post-development condition to that of the pre-condition.

thereof. An equivalently effective, similarly geomorphically-referenced approach may be developed and applied in the future in place of the erosion potential approach.

11. **Chloride.** For purposes of further treating wastewater (to a chloride level of 100 mg/l or less for up to 6000 equivalent dwelling units) from Newhall Ranch that will be sent to the Valencia WRP, Newhall Land, or its successor, shall complete construction of interim chloride and demineralization facilities to the satisfaction of the Regional Board prior to discharging sewage from Newhall Land to the Valencia WRP or other publicly owned treatment works. The interim chloride and demineralization facilities shall be sufficient to ensure that any wastewater discharge attributable to Newhall Ranch does not result in discharge to the Santa Clara River of effluent containing chloride in concentrations exceeding 100 mg/l. If sewage from Newhall Land does not already meet the chloride limit of 100mg/L, an equivalent volume of effluent shall be removed from the combined Newhall/Valencia partially treated waste stream and shall be treated at the interim chloride and demineralization facility to meet 100 mg/L chloride prior to discharge.

    Dischargers of wastewater from Newhall Land to Valencia WRP shall not exceed the flow from 6000 equivalent dwelling units.

    Newhall Land, or its successor, shall complete the construction of the Newhall Ranch WRP with a capacity to treat wastewater generated by at least 6,000 equivalent dwelling units on or before the date that construction of the 6,000th equivalent dwelling unit within Newhall Ranch is completed.

12. **Buffers** Newhall Land shall provide Open Space Buffers, consisting of riparian buffers and development setbacks, along portions of the Santa Clara River, consistent with the design of the approved RMDP and with Finding 21 of this Order.

13. **Water Quality Monitoring during Work Within or Adjacent to Flowing Streams** The objectives of the water quality monitoring are to assess BMP effectiveness and to ensure that water quality is not impacted as a result of the construction activities, dewatering discharge or surface water diversion within or adjacent to flowing streams. BMPs are to be implemented in association with project activities to avoid exceeding water quality standards. For each project area within a tributary drainage, three (3) sampling stations: upstream of project, within project; and downstream of project reach, shall be established. For projects along the Santa Clara River, at least three (3) sampling stations shall be established: upstream of any construction related stormwater or dewatering water discharge point, points at each tributary confluence where grading has, is or will occur in the tributary's watershed; and downstream of the most downstream construction related stormwater or dewatering water discharge point. The testing

parameters required will be as follows: Surface water monitoring shall be Surface Water Ambient Monitoring Program (SWAMP) compliant.

- pH
- temperature
- dissolved oxygen
- turbidity
- total suspended solids (TSS)

Downstream TSS shall be maintained at ambient levels. Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

These constituents shall be measured at least once prior to the construction activity and then monitored on a daily basis during the first week of construction activity, and then on a weekly basis, thereafter, until the work is complete within or adjacent to flowing streams. If no surface flow is present, then such conditions shall be documented. Analyses must be performed using approved USEPA methods, where applicable, or using methods approved by the Executive Officer. Any violations may result in corrective and/or enforcement actions, including increased monitoring and sample collection. Newhall Land shall submit results of the analyses to the Regional Board, to the attention of the 401 Program Unit, within 30 days of each subsequent sampling event. A map or drawing indicating the locations of sampling points shall be included with each submittal.

14. **Surface Water Diversion Requirements and Water Quality Monitoring**. All surface waters, including ponded waters, shall be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. If surface water diversions are anticipated, Newhall Land shall develop and submit a project specific Surface Water Diversion Plan (plan) to the Executive Officer. The plan shall be consistent with the Aquatic Species Project / Surface Water Diversion Plan submitted with the application (Attachment 5) and shall include the proposed method and duration of diversion activities, structure configuration, construction materials, equipment, erosion and sediment controls, and a map or drawing indicating the locations of diversion and discharge points. Contingency measures shall be a part of this plan to address various flow discharge rates. The plan shall be submitted 21 days prior to any surface water diversions. Surface water monitoring shall be Surface Water Ambient Monitoring Program (SWAMP) compliant.

If surface flows are present, then upstream and downstream monitoring for the following shall be implemented pursuant to Condition 11 above:

- pH
- temperature
- dissolved oxygen
- turbidity
- total suspended solids (TSS)

Downstream TSS shall be maintained at ambient levels. Where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 20%. Where natural turbidity is greater than 50 NTU, increases shall not exceed 10%.

Analyses must be performed using approved USEPA methods, where applicable, or methods approved by the Executive Officer. These constituents shall be measured at least once prior to diversion and then monitored for on a daily basis during the first week of diversion, and then on a weekly basis, thereafter, until the in-stream work is complete.

Photographs shall be taken at each station during sampling to demonstrate the condition of the stream.

Newhall Land shall submit results of the analyses to the Regional Board, to the attention of the 401 Program Unit, within 30 days of each subsequent sampling event. A map or drawing indicating the locations of sampling points shall be included with each submittal.

Diversion activities shall not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Any such violations may result in corrective and/or enforcement actions, including increased monitoring and sample collection.

15. **Aquatic Nuisance Species Control**. Newhall Land shall develop and implement a Plan for Hazard Analysis and Critical Control Points (HACCP Plan) in order to implement prevention and control of aquatic nuisance species and instruct construction and maintenance personnel in HACCP Plan provisions. The draft HACCP Plan shall be submitted to the Regional Board 401 Certification Unit staff within two months after issuance of this Order. To reduce the potential for the spread of New Zealand mud snails, or other aquatic nuisance species of concern, during Project clearing and construction, all heavy equipment proposed for use on the Project site shall be verified cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the Project site. Equipment must be documented as mud snail free upon delivery to the Project site initial staging area, including: (1) vegetation clearing equipment (skid steer loaders, loaders, dozers, backhoes, excavators, chippers, grinders, and any hauling equipment, such as off-road haul trucks, flat bed, or other vehicles); (2) earth-moving equipment (scrapers, dozers, excavators, loaders, motor-graders,

compactors, backhoes, off-road water trucks, and off-road haul trucks); and (3) all Project-associated vehicles (including personal vehicles) that, upon inspection by the project biologist, are deemed to present a risk for spreading mud snails. Equipment shall be cleaned at existing construction yards or at a wash station and equipment that has been in mudsnail impacted areas shall be required to dry out in the sun for a period of no less than 48 hours prior to use in other areas. The biological monitor shall document that all construction equipment (as described above) has been properly cleaned and dried prior to working within the Project work site. Any equipment/vehicles determined to not be free of mud snails shall immediately be sent back to the originating construction yard for washing and proper drying, or wash station where rinse water is collected and disposed of in either a sanitary sewer or other legal point of disposal. Equipment/vehicles moved from the site must be inspected, and re-washed and re-dried as necessary, prior to re-engaging in construction activities in the Project work area. A written daily log shall be kept for all vehicle/equipment washing that states the date, time, location, type of equipment washed, methods used, and location of work.

16. **Weed (including weed seed) Control.** To reduce the potential for the spread of weeds (including weed seeds) during Project clearing and construction, all heavy equipment proposed for use on the Project site shall be verified cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the Project site. Equipment must be documented as weed free upon delivery to the Project site initial staging area, including: (1) vegetation clearing equipment (skid steer loaders, loaders, dozers, backhoes, excavators, chippers, grinders, and any hauling equipment, such as off-road haul trucks, flat bed, or other vehicles); (2) earth-moving equipment (scrapers, dozers, excavators, loaders, motor-graders, compactors, backhoes, off-road water trucks, and off-road haul trucks); and (3) all Project-associated vehicles (including personal vehicles) that, upon inspection by the project biologist, are deemed to present a risk for spreading weeds. Equipment shall be cleaned at existing construction yards or at a wash station. The biological monitor shall document that all construction equipment (as described above) has been cleaned prior to working within the Project work site. Any equipment / vehicles determined to not be free of weeds shall immediately be sent back to the originating construction yard for washing, or wash station where rinse water is collected and disposed of in either a sanitary sewer or other legal point of disposal. Equipment/vehicles moved from the site must be inspected, and re-washed as necessary, prior to re-engaging in construction activities in the Project work area. A written daily log shall be kept for all vehicle/equipment washing that states the date, time, location, type of equipment washed, methods used, and location of work.

17. **Invasive Plant Removal.** Revegetation and/or mitigation plans which include removal of non-native species such as giant reed (*Arundo donax*), salt cedar (*Tamarix* sp.), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), shall be subject to the following standards: (1) First priority shall be given to

those vegetation community patches that support or have a high potential for supporting special-status species, particularly endangered or threatened species~~.~~; (2) All non-native species removals shall be conducted according to CDFG-approved exotics removal program; and (3) Removal of non-native species in patches of native vegetation communities shall be conducted in such a way as to minimize impacts to the existing native riparian plant species. The exotics control program may utilize methods and procedures in accordance with the provisions in the Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Final EIR, dated February 2006, or alternative methods and procedures approved by the agencies.

18. **Invasive Aquatic Species Control.** Newhall Land shall retain a project biologist to develop an Exotic Wildlife Species Control Plan for the control of bullfrog, African clawed frog, and crayfish. A copy of the Plan shall be provided to the Executive Officer. The program will require the control of these species during construction within the River corridor and modified tributaries (bridges, diversions, bank stabilization, drop structures). The Plan shall include a description of the species targeted for eradication, the methods of harvest that will be employed, the disposal methods, and the measures that would be employed to avoid impacts to sensitive wildlife (e.g., stickleback, arroyo toad, nesting birds) during removal activities (i.e., timing, avoidance of specific areas). Annual monitoring shall occur for the first five years after construction of Project facilities. After five years, bi-annual monitoring shall occur in perpetuity to determine if additional control is necessary. Newhall Land will fund an endowment, approved by CDFG, for monitoring in perpetuity. Monitoring will be conducted within sentinel locations along the River Corridor SMA and where the Project provides potential habitat for these species (e.g., future ponds and water features). Control shall be conducted within Project facilities where monitoring results indicate that exotic species have colonized an area. Results of control efforts shall be submitted in accordance with the Annual Report described below.

19. **Pesticides**. Application of pesticides must be supervised by a certified applicator and must be in conformance with manufacturer's specifications for use. Compounds used must be appropriate to the target species and habitat. Pesticide utilization shall be in accordance with State Water Resources Control Board Water Quality Order Nos. 2011-0004-DWQ and 2004-0009-DWQ (or subsequent Orders). Any pesticides proposed for use which are not approved under this Order will be subject to separate certification.

20. **Soil Reuse – Santa Clara River**. Newhall Land shall salvage and replace soils, when on-site soils are conducive to restoration of temporary impact areas and mitigation creation sites along the Santa Clara River. Salvaging the topsoil from native habitats impacted by the project will help improve edaphic conditions for native seed germination, plant growth, and native vegetation establishment within

the mitigation areas, as well as to help preserve soil biota.- Newhall Land shall ensure that salvaged soils to be placed in bank protection excavation areas will have comparable grain size distribution and similar soil profiles to the existing River (e.g., having soil profile similar to the Santa Clara River).

21. **Soil Reuse – Tributary Drainages**. Newhall Land shall salvage soils to be used when on-site soils are conducive to the establishment of specific vegetation types or are critical to providing suitable channel substrate conditions. In instances where soil characteristics may be critical to the resulting habitat supported by the reconstructed channel (e.g., Long Canyon), soil salvage from the impacted drainage, and replacement of those soils in the newly created channel, shall be implemented to the extent feasible. Soil salvage shall be implemented in these instances to provide comparable grain size distribution within the constructed channel bottom, and to create a similar soil profile as found in the stream course prior to being impacted. Recreating the physical soil profile in constructed channels shall be achieved through salvaging of soils or where onsite soils are not suitable for salvage, by preparation and amendment of soil materials for the creation of a soil profile with similar percolation and water retention characteristics as the impacted channel. If soil is imported and/or amended for the purpose of reuse, the soils shall also have a similar visual appearance to the channel before impact.

22. **Wet Excavations**. Newhall Land shall obtain all legally required authorizations prior to any excavation below the seasonal high water table, including, if appropriate, coverage under the General Waste Discharge Requirements for Discharges of Groundwater from Construction Dewatering to Surface Waters. (R4-2008-0032 or subsequent authorizations) or General Waste Discharge Requirements for Discharges to Groundwater (93-010 or subsequent authorizations).

23. **Limitations during rainfall**. Newhall Land shall not conduct any construction activities within waters of the State during a rainfall event. Newhall Land shall maintain a five-day (5-day) clear weather forecast before conducting any operations within waters of the State. If any Project activities are to be held within five (5) days of a predicted rainfall event, Newhall Land shall stage materials necessary to prevent water degradation on site, and shall ensure that all stabilization procedures are completed prior to the rainfall event. If rain is predicted after operations have begun, grading activities must cease immediately and the site must be stabilized to prevent impacts to water quality and minimize erosion and runoff from the site.

24. **Vegetation Clearing**. During construction, all protected areas shall be marked properly by a Project Biologist (see provision 3. 6) to ensure that no vegetation outside the specified areas is removed. The biologist shall have the authority to stop the work, as necessary.

25. **Project Phasing**. Active construction sites shall comply with interim soil stabilization requirements of the Construction General Permit (Order No. 2009-0009-DWQ; NPDES No. CAS000002 adopted September 2, 2009; effective July 1, 2010), as amended or reissued, and applicable South Coast Air Quality Management District Rule 403 requirements. The following types of BMPs shall be implemented as needed during construction to provide erosion control: physical stabilization through application of hydraulic mulch, soil binders, straw mulch, bonded and stabilized fiber matrices, compost blankets, and erosion control blankets (i.e., rolled erosion control products); limiting the area and duration (<14 days) of exposure of disturbed soils; soil roughening of graded areas (through track walking, scarifying, sheepsfoot rolling, or imprinting) to slow runoff, enhance infiltration, and reduce erosion; vegetative stabilization through temporary seeding and mulching to establish interim vegetation; and wind erosion (dust) control through the application of water or other dust palliatives as necessary to prevent and alleviate dust nuisance.

26. **Geomorphology Monitoring and Management, Tributaries**. Newhall Land shall prepare and implement a Geomorphology Monitoring and Management Plan (GMM Plan) to ensure that the modified/re-engineered drainages along the major tributaries (Long, Lion, Potrero, Chiquito, and San Martinez Grande Canyons) comply with the mitigation objectives and design goals outlined in the Newhall Ranch Tributary Channel Design Guidelines.

    a. A copy of the GMM Plan prepared for each major tributary drainage shall be provided to the Executive Officer.

    b. The GMM Plan shall include the measures to be implemented to ensure the integrity of the structural elements and a state of "constrained dynamic equilibrium", and shall specify the following: (1) a framework to collect baseline data to characterize conditions immediately after construction; (2) a post-development monitoring program; (3) a framework to develop erosion and sedimentation threshold parameters and performance standards that activate adaptive management measures across a series of potential future scenarios; and, (4) contingency plans and appropriate remedial measures in the event that management efforts are not successful.

    c. GMM Plan elements shall include: as-built survey for the completed channels to include a full longitudinal profile, cross-sections, and all in-channel structures; map of the channel floodplain and valley toe and identify channel migration zones; additional survey, visual inspection and channel migration assessment in years 1, 3, 5, 10, and 20 following construction and after a flow event exceeding the 10-year recurrence interval including a determination of whether remedial actions or more detailed studies are required; and after all flood events exceeding the 5-year recurrence interval flow, then a qualified geomorphologist or civil engineer shall conduct an inspection of the channel to evaluate for signs

of erosion, "knickpoints" or "head cuts", flanking of structures, and piping or erosion around the project structures.

d. In addition to the measures identified above, the GMM Plan shall describe the potential remedial techniques to prevent, mitigate, abate, or control undesirable geomorphic response. These measures will include (but will not be limited to) the following: 1) Repair, maintenance or replacement of creek structures and development improvements; 2) Stabilization (either partial or total) of eroded areas or failures of the creek slopes by removal and replacement with appropriate materials; 3) Construction of erosion control measures that, where feasible, will consist of bio- engineering techniques; 4) Placement of subsurface drainage devices; 5) Slope correction; and 6) Construction of additional surface ditches and/or ponds, sediment traps, or backfill of eroded channels.

e. Notification of proposed remedial techniques to the Regional Board prior to site activity must be made and applicable approvals and additional permits or certifications from the Regional Board must be obtained prior to implementing remedial actions.

27. **Geomorphology Monitoring and Management, Santa Clara River, Downstream Effects**. Newhall Land shall prepare a Geomorphological Monitoring and Management Program (Downstream Effects Monitoring Program) to specifically analyze downstream effects within the Santa Clara River (downstream of project tributaries and in reaches between project tributaries). Newhall Land shall utilize the services of an experienced geomorphologist with expertise in flashy and sandy rivers like the Santa Clara River to prepare the Geomorphological Monitoring and Management Program plan within six (6) months of the effective date of this Order for Executive Officer approval. The monitoring program shall at a minimum, perform annual monitoring to analyze river contours, elevations, aggradation and erosion, and any downstream impairments or changes to the Santa Clara River flow regimes as a result of the RDMP. The plan shall also identify triggers or geomorphological change action levels and identify the additional actions and schedule which Newhall Land will take if action levels are exceeded.

28. **Soil Analysis**. Within six months of the adoption of this Order, Newhall Land or its designee shall submit a workplan for Executive Officer approval that sets forth soil analysis/sampling criteria to be used in development areas within the RMDP that either presently or historically have been used for agricultural activities. Sampling shall be in accordance with DTSC protocol for residential and school sites and shall use the California Human Health Screening Levels (CHHSLs). Newhall Land or its designee shall implement the approved workplan. If sample results exceeds the CHHSL for the applicable land use, then the RMDP Final EIS/EIR Mitigation Measure PH-12 shall be implemented to remediate the area prior to development.

29. **Dust control**. Dust control activities shall be conducted in such a manner that will not produce impacts to downstream runoff.

30. **Construction Plans.** Construction plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction. In addition to applicable erosion control plans and performance under South Coast Air Quality Management District Rule 403d dust control, the Project stormwater pollution prevention plan (SWPPP) shall include BMPs as described in Provision Nos. 8 and No. 29 above. Construction plans shall provide location and details for any dust control fencing along Project boundaries. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP, and noted on construction plans where appropriate, to avoid impacting special status species during construction. In addition, invasive or exotic plants shall not be planted in development areas within 200 feet of native vegetation communities, natural areas and natural or constructed drainages.

Conditions associated with Ongoing Operations and Maintenance: The following terms shall be applicable to all activities conducted within the boundaries of the RMDP, including but not limited to, ongoing operations and maintenance activities.

31. **Protection of Water Quality**. Newhall Land shall implement all appropriate Stormwater Best Management Practices (BMPs) to avoid adverse impacts to water quality. Newhall Land shall demonstrate to the Executive Officer that an Operation and Maintenance Plan for ongoing maintenance provisions for all structural BMPs for each development area within the RMDP site has been prepared. The RMDP shall not result in indirect impacts to beneficial uses of downstream water bodies or cause or contribute to violation of applicable water quality objectives or water quality criteria in downstream water bodies, either during construction or during operation subsequent to the construction activities (post-development operation and maintenance).

32. **Post-Construction Measures**. In order to protect water quality following the completion of construction, Newhall Land shall implement all water quality measures described in the NRSP Sub-Regional SWMP, as amended, to protect water quality and comply with the Los Angeles County MS4 Permit. Newhall Land shall prepare and submit to the Executive Officer, for review a Water Quality Technical Report and Drainage Concept Report for each subsequent development area within the RMDP site, which shall provide detailed, site-specific information about the water quality measures to be implemented in that development area, including site design, source control, low impact development (LID), treatment control, and hydromodification control BMPs to effectively manage wet-weather and dry-weather water quality and quantity by limiting or

managing pollutant sources and changes in flow rates, velocities, and shear stresses consistent with Finding 17. Newhall land shall implement the water quality measures for each project within the RMDP site.

33. **Maintenance**. Newhall Landor any other entity authorized by Newhall Land to perform maintenance of RMDP water quality, flood control, road crossings, bridges, storm drain outlets, WRP outlet, utility crossings, and recreational trail facilities, shall comply with all specifications and requirements of the Maintenance Plan of the RMDP and the Maintenance Plan for Structures or any subsequently approved Plan, including those pertaining to notification, biological surveys/species protection, biological impacts, re-vegetation of temporarily impacted areas, and reporting. Any agreement between Newhall Land and any other entity authorizing the performance of maintenance, or any agreement transferring ownership or operation of any of the facilities encompassed in the RMDP, shall include a provision requiring compliance with all specifications and requirements of the Maintenance Plan of the RMDP and the Maintenance Plan for Structures, or any subsequently approved Plan.

34. **Maintenance Plan for Structures**. In addition to the Newhall Ranch RMDP Maintenance Manual, Newhall Land shall develop a Maintenance Plan for Structures, for any structures within waters of the United States and of the state such as culverts, buried bank stabilization, grade control structures, etc. The Maintenance Plan for Structures shall include a plan for restoration of bank stabilization or grade control structures as needed, including restoration of scoured areas to ensure the integrity of these structures in perpetuity and avoid any lengths of drainage or river areas with lengthy sections of scoured out areas that expose the buried bank stabilization.

35. **Biological Surveys for Maintenance.** Prior to start of any maintenance clearing, project biologists shall perform pre-clearing biological resource surveys and photo documentation including sensitive/endangered species focused surveys on specific reaches. No work shall commence without confirmation of findings or no findings of sensitive/endangered species from the project biologists. These surveys are also meant to minimize impact on any resources that may potentially use or benefit from the channel. During construction, project biologists shall be available for consultation for any issues that may arise.

36. **Storm Drain and Receiving Water Quality Monitoring**. Representative and rotating outfall-based water quality monitoring shall be conducted to determine impacts of the NRSP over time. Water samples will be taken at least four (4) times a year to include at least twice in wet weather and once in dry weather. Parameters to be considered will include at a minimum:

- pH
- temperature
- dissolved oxygen

- turbidity
- total suspended solids (TSS)
- *E. coli*
- Chloride
- Ammonia as nitrogen (NH_3-N)
- Nitrate as nitrogen (NO_3-N)
- Nitrite as nitrogen (NO_2-N)
- Total phosphorus
- Metals
- Organochhlorine pesticides
- Organophosphorus pesticides
- Pyrethroid pesticides
- PAHs
- Volatile organics

Newhall Land will develop a Storm Drain monitoring plan and submit the plan to the Executive Officer for approval within 6 months of the effective date of this Order. The Storm Drain Monitoring plan will include sampling the first storm of the wet season that produces at least 0.25" of rain for the seasonal first flush.

Benthic macroinvertebrates will be assessed in the receiving waters. Newhall Land will develop a plan for the assessment of benthic macroinvertebrates and submit the plan to the Executive Officer for approval within 6 months of the effective date of this Order.

Analyses must be performed using approved USEPA methods, where applicable, or a method approved by the Executive Officer. Newhall Land shall submit results of the analyses to the Regional Board with annual reporting including comparisons to applicable water quality standards and to the estimated annual pollutant concentrations for stormwater discharges presented in the RMDP final EIR. A map or drawing indicating the locations of sampling points shall be included with each submittal.

If data demonstrate exceedances of water quality standards or significant pollutant contributions contributing to exceedances of water quality standards in the receiving waters, increased monitoring may be required and the WDR may be revised to require additional or modified BMPs or effluent benchmarks or limits.

3.1 Mitigation for Impacts to Waters of the United States

1. Newhall Land shall enhance, restore and create 132.2 acres of waters of the United States, including 35.2 acres of wetlands and 97 acres of non-wetland waters in the Santa Clara River and its tributaries, to mitigate for authorized permanent and temporary impacts to waters of the United States, as described in

the Corps' Clean Water Act Section 404 Permit Mitigation Plan (404 Permit Mitigation Plan) (**Attachment 3**). Permanent impacts shall be mitigated at a minimum of 2.4:1 mitigation ratio, including mitigation in advance of impacts as described below, and temporary impacts shall be actively restored in accordance with the 404 Permit Mitigation Plan and MSAA Mitigation Measure BIO-2. (**Attachments 3 and 4**).

2. In addition to, and in conjunction with, the requirements of the Corps Permit and MSAA Mitigation Measure BIO-2. Newhall Land shall conduct CRAM assessments of waters to be impacted and of restored, created or enhanced waters.

3. At least 54.9 acres of compensatory mitigation shall be implemented prior to any development impacts to waters of the United States, including 19.3 acres of wetlands creation in Lower Potrero Canyon, 15.9 acres of wetland creation in the Santa Clara River at Mayo Crossing, and 19.7 acres of habitat enhancement in portions of the upper Salt Creek watershed.

4. Newhall Land shall preserve and protect in perpetuity approximately 612.2 acres of waters of the United States that are not permanently impacted, including 271.8 acres of wetlands and approximately 271,861 linear feet of existing waters of the United States in Castaic Creek, the Santa Clara River and tributary drainages within the RMDP area, as required by the CDFG MSAA. The preservation areas will be preserved in perpetuity through deed restrictions, conservation easements or restrictive covenants that will run with the land and bind subsequent land owners and that are recorded in the appropriate County Recorder's office. Newhall Land must provide endowment funding for perpetual management of the preservation area. Newhall Land shall record the required deed restrictions, conservation easements, or restrictive covenants according to the schedule set forth in the CDFG MSAA and provide notice to the Executive Officer within 30 days of recording.

5. Newhall Land shall place restrictive covenants for flood protection on an additional approximately 119 acres of Ventura County floodplain downstream of the RMDP, consisting of approximately 89 acres of waters of the United States and 30 acres of adjacent upland floodplain area in the Santa Clara River. Newhall Land shall record the restrictive covenants, subject to concurrence by the Regional Board, in the Ventura County Recorder's office. The restrictive covenants shall run with the land and bind subsequent land owners. The Discharger shall provide notice to the Executive Officer within 30 days of recording the restrictive covenants.

6. For mitigation of floodplain loss and to provide further downstream floodplain protection, Newhall Land shall record conservation easements , restrictive covenants, or deed restrictions for floodplain protection for the 80 acres of upland floodplain area adjacent to the Santa Clara River, downstream of the project area. The 80 acres of upland floodplain area covered by the conservation easements,

restrictive covenants, or deed restrictions shall be in addition to the 30 acres of upland floodplain area required to be placed under conservation easements, restrictive covenants, or deed restrictions by Condition 5 for a total of 110 acres of upland floodplain area plus 89 acres of waters of the United States. Farm areas covered by the 80 acres of upland floodplain under conservation easement, restrictive covenant, or deed restriction, that are scoured by flooding will not be reclaimed for farm purposes except as needed for water wells, pipelines, utility lines, outfall structures, roads and other infrastructure. Newhall Land shall record conservation easements, restrictive covenants, or deed restrictions, subject to concurrence by the Regional Board, in the appropriate County Recorder's office that will run with the land and bind subsequent land owners. Prior to any disturbance to waters of the United States, the Discharger shall record the conservation easements, restrictive covenants, or deed restrictions and provide notice to the Executive Officer within 30 days of recording.

7. The conservation easements, restrictive covenants, or deed restrictions required by this Condition shall prohibit any development within the restricted area with the exception of structures for agricultural activities including farming, ranching, orchards and vineyards; installation of agricultural water wells; structures related to the Santa Clara River Corridor River Parkway Project; installation of pipelines or utility lines of any kind; legal water diversions; outfall structures; other infrastructures; or activities associated with habitat restoration and enhancement. These exceptions must not increase the base flood elevation (as defined by the Federal Emergency Management Agency) above that existing at the time of recordation, whether within the restricted area or upstream or downstream of the restricted area or contribute to increased risk of downstream flooding, whether or not resulting from increased base flood elevation. For purposes of the conservation easements, restrictive covenants, or deed restrictions, the term "development" shall be defined to mean any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.

8. Newhall Land shall restore all temporarily impacted waters of the United States with appropriate native vegetation after construction is complete in those areas, as required by the 404 Permit Mitigation Plan (**Attachment 3**).

9. All mitigation areas shall be preserved and maintained as habitat in perpetuity in accordance with the Corps Permit and the CDFG MSAA, including provisions for endowment funding and transfer of property ownership to a Natural Lands Management Organization (NLMO). Newhall Land shall record conservation easements, restrictive covenants, or deed restrictions in the County Recorder's office that will run with the land and bind subsequent land owners.

3.2 Reporting

1. **Subnotification.** Subnotification of permitted activities as required by the CDFG MSAA and the Corps Permit shall also be submitted to the Regional Board.

2. **Annual Mitigation Monitoring and Reporting**. Pursuant to California Water Code section 13267, Newhall Land shall submit to the Regional Board Executive Officer an **Annual Project and Mitigation Monitoring Report (Annual Report)** by April 1 of each year for each year the Order is in effect. The Annual Reporting outline shall be submitted to the Regional Board within 60 days of the issuance of this Order. The outline should include all relevant information to meet reporting requirements and also include any technical or field checklists which will be utilized. Upon receipt, the Executive Officer will have 30 days to comment or approve of the Annual Report outline.

3. The Annual Report shall primarily consist of a summary status report on all RMDP construction, maintenance, and waters of the United States and waters of the State compensatory mitigation projects initiated in the prior year and shall provide copies of annual monitoring reports for any active restoration and compensatory mitigation projects associated with authorized activities under the RMDP. The Annual Report shall describe in detail all of the permitted activities (construction and maintenance) performed during the previous year and all restoration and compensatory mitigation efforts implemented to date. The Annual Reports shall describe the status of other agreements (e.g., mitigation banking); any delays in the mitigation process; and summary of upcoming mitigation implementation. At a minimum the Annual Reports shall include the following documentation:
   a) Overall status of active projects, including a detailed schedules to complete authorized work;
   b) Dates of activities completed during the prior year period, through February of the reporting year, including construction, maintenance, and mitigation;
   c) Acreage of areas impacted in the prior year period;
   d) Schedule of proposed activities for the subsequent 18 months, beginning in February of the reporting year, including construction, maintenance, and mitigation;
   e) Acres of areas to be impacted during the subsequent 18 months;
   f) Description of activities in or adjacent to flowing waters, including results of required water quality monitoring;
   g) Results of storm drain and receiving water monitoring;
   h) Results of Geomorpholgy monitoring in tributaries and the Santa Clara River;
   i) Narrative and photo documentation of any BMP installations during project activities and immediately after activities as well as periodically during the activities, including storm events. In addition, an evaluation of

the effectiveness of BMPs utilized shall be provided based on field observations;

j) Documentation of estimates of volumes of vegetation removed from the project areas, including representative photos;

k) Description of any stream diversions performed in the prior year period, including results of required water quality monitoring and representative photos;

l) Description of any dewatering discharge conducted in the prior year period and summary of discharge water quality monitoring, including maps of discharge locations, dates of discharge, and discharge volumes.;

m) Overview of any revegetation effort and its success in meeting performance criteria, including percent survival by plant species and percent cover; the method used to assess these parameters; CRAM and HARC evaluations, when appropriate; and all information stipulated in the Mitigation Plan as well as any site specific mitigation plan pursuant to the Corps 404 Permit or CDFG MSAA.

n) Color photo documentation of the immediately pre- and post-project and mitigation site conditions as well as periodic photo documentation of post-project and mitigation site conditions between project activities;

o) Discussion of any monitoring activities and exotic plant control efforts;

p) Geographical Positioning System (GPS) coordinates in decimal-degrees format outlining the boundary of actual project and new mitigation areas;

q) Biological information including: baseline biological surveys and exotic / invasive wildlife species control efforts;

r) Documentation of estimates of volumes of trash removed from maintenance areas;

s) Documentation of estimates of volumes of sediment removed from maintenance areas;

t) Copies of all revised permits related to this project;

u) Results of exotic invasive animal species control efforts, both summarized in tabular form and with location maps;

v) Description of all outreach activities in the previous year;

w) Reuse of treated effluent from the Newhall Ranch WRP during the previous year;

x) A certified statement of the compliance status with the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) ensuring "no overall loss"; and

y) A certified statement from Newhall Land that all information reported in the Annual Report is complete and accurate. This Report will include a summary of compliance with all requirements of this Order.

The Annual Reports shall describe the status of other agreements (e.g., mitigation banking) or any delays in the mitigation process. The CDFG MSAA "Mitigation Accounting Report" form may be used to provide the summary of mitigation activities.

1. **Compensatory Mitigation Implementation Reporting.** Within 45 calendar days of complete implementation for each mitigation site, Newhall Land shall submit to the Executive Officer a memo indicating the following:

   a. Date(s) all mitigation (grading, planting and irrigation infrastructure) was installed and monitoring was initiated;

   b. Schedule for future mitigation monitoring, implementation and reporting pursuant to the 404 Permit Mitigation Plan and site-specific mitigation;

   c. Color photographs taken at the mitigation site before and after grading, planting and placement of irrigation infrastructure; and

   d. One copy of "as built" drawings for the mitigation site (all sheets must be signed, dated, to-scale, and no larger than 11 x 17 inches).

   e. As-built construction drawings with an overlay of waters of the United States that were impacted;

   f. Dated and labeled color photographs of waters of the United States that were permanently and temporarily impacted (including latitude and longitude coordinates);

   g. A summary of all project activities which documents that authorized impacts to waters of the United States and waters of the State were not exceeded.

   h. For active exotic invasive plant species control sites, the Annual Report Outline shall include an assessment of exotic invasive plant removal; a description of the relative cover of native vegetation, bare areas, and exotic invasive species vegetation; colonization by native plants; and photographs.

   i. Conclusions and recommendations from the project and/or restoration biologist, either affirming plan interim or final goals are met, or suggesting remedial actions or adaptive management efforts where goals are not met.

2. **Five-Year Review Report.** Newhall Land shall provide a status report to the Executive Officer on April 1 (**5-Year Report**) of the fourth year of each five year period that this Order is in effect, with the first 5- Year Report due April 1 in the fourth year after the effective date of this Order. In this manner, the initial 5-Year Report will contain summary data for the year this Order goes into effect and the three subsequent years of activity, for a total of four years. Subsequent 5-Year Reports will contain five years of summary data, as the information for the reporting year of the prior 5-Year Report will also be included. Newhall Land may meet this requirement by submitting the **Annual Mitigation Monitoring and Reporting** described above on or before April 1 together with each annual report it submitted in the prior years for that five year review report period, however all summary tables, descriptions, and figures shall be comprehensive of the entire five year report review period.

3. All applications, reports, or information submitted to the Regional Board shall be signed:

   (a) For corporations, by a principal executive officer at least of the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which discharge originates.

   (b) For a partnership, by a general partner.

   (c) For a sole proprietorship, by the proprietor.

   (d) For a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

4. Each and any report submitted in accordance with this Order shall contain the following completed declaration;

   "I declare under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

   Executed on the _____ day of _____ at _____.

   _____ (Signature)
   _____ (Title)"

3.3 Administrative

1. **Other permits**. Newhall Land shall submit to this Regional Board 401 Certification Unit staff copies of any other final regulatory agency permits and agreements required for this project. These documents shall be submitted prior to any discharge to waters of the State. All activities not included in this Order, and which may require a permit, must be reported to the Regional Board for appropriate permitting, including individual water quality 401 Certifications for projects within the RMDP Project site that are not covered by this Certification. Newhall Land shall adhere to the most stringent conditions indicated with either this Certification, the CDFG's MSAA, or the Corps Section 404 Permit.

2. **On Site Documents**. Newhall Land and all contractors employed by Newhall Land shall have copies of this Order, including attachments, and all other regulatory approvals for this project on site at all times and shall be familiar with all conditions set forth therein.

3. **Access**. Newhall Land shall allow the Regional Board and its authorized representative reasonable entry to the premises under its control, including all mitigation sites, to inspect and undertake any activity to determine compliance with this Order, or as otherwise authorized by the California Water Code.

4. **Communications**. All communications regarding this project and submitted to this Regional Board shall identify the Project File Number **11-168 WDR.** Submittals shall be sent to the Executive Officer where identified and to the 401 Certification Unit.

5. **Transfer permitted**. Coverage under this Order may be transferred to the extent the underlying federal permit may legally be transferred. Newhall Land or any subsequent transferor must notify the Executive Officer at least 30 days before the date of the proposed transfer date, and the notice must include a written agreement between the existing and new party containing a specific date of coverage, responsibility for compliance with this Order, and liability between the parties. The transferee may be required to file an ROWD or application for CWA Section 401 Water Quality Certification for any new impact associated with the transfer of this Order. Upon transfer, the term "Newhall Land" and "Discharger" as used in this Order shall apply to the transferee.

6. **Long-Term Financial Assurance and/or Responsibility**. Newhall Land shall ensure that any maintenance, restoration, mitigation, monitoring and reporting, and other obligations related to mitigation and stormwater controls that require long term implementation or maintenance imposed by this Order, shall be supported by a demonstration of financial assurance or transfer and assumption of responsibility to an appropriate entity, subject to approval by the Executive Officer. An appropriate entity may include, without limitation, a special district or an agency of the County of Los Angeles. Where financial assurance is used, the financial assurance may be in the form of a performance bond, escrow account, letter of credit or other appropriate instruments, subject to the approval of the Executive Officer. Newhall Land must notify the Executive Officer at least 30 days before the date of a transfer of obligations imposed by this Order, and the notice must include a written agreement between the existing and new party containing a specific date of transfer of obligations.

7. **Additional Project Information Review.** Newhall Land must provide additional information as required by the Regional Board to determine compliance of activities with this Order. Activities may require additional review if the work exceeds certain thresholds of impact. For projects that exceed the following thresholds, Newhall Land shall provide information similar to a pre-construction

notification for a 401 Water Quality Certification for 60-day review. Any change to the project that would have a significant or material effect on the findings, conclusions or conditions of this certification must be submitted to the Executive Officer for prior review and written approval.

Project Exceeds Authorized Boundary of Impacts (Original Footprint)
For any work resulting in temporary or permanent impacts within the ordinary high water mark outside the authorized impact boundaries, Newhall Land shall submit a new proposed scope of work to the Executive Officer for confirmation that the project areas is within the scope of this Order and may be required by the Executive Officer to reapply for supplemental WDRs with all pertinent information for consideration. The authorized impact boundaries are shown on the figures attached to this Order, and for drainages converted to storm drain, the defined project impacts include the entire width of the stream channel, with an upper and lower boundary defined for each jurisdictional area. For impacts along the margin of a stream channel, such as the river and larger tributaries, the authorized impact area is a defined lateral limit as shown on the figures attached to this Order.

Maintenance Exceeds Authorized Boundary of Impacts (per Maintenance Manual) or Project Design Feature Is Modified Due to a Failure
For any work resulting in temporary or permanent impacts within the ordinary high water mark outside the authorized impact boundaries, as further defined in the RMDP Maintenance Manual, Attachment 2, or in the event that a project feature fails to meet the design objectives and a significantly altered or new design is necessary, Newhall Land shall submit a new proposed scope of work to the Executive Officer for confirmation that the project areas is within the scope of this Order and may be required by the Executive Officer to reapply for supplemental WDRs with all pertinent information for consideration.

Project Deviates from the Pre-Approved Surface Water Diversion Plan
If water diversion is planned to occur in a manner which deviates from a Pre-Approved Water Diversion Plan, Newhall Land shall submit the new plan to the Executive Officer for review and approval. The Executive Officer is authorized to approve changes to a Surface Water Diversion Plan provided that the changes are consistent with this Order.

Emergency Activities
In addition, for emergency maintenance in any reach covered by this Order as discussed above, Newhall Land shall request an emergency certification under Regional General Permit 63 (RGP 63). Emergency is defined as, "a sudden, unexpected, occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. Emergency includes such occurrences as

fire, flood, earthquake, or other soil or geologic movement, as well as such occurrences as riot, accident, or sabotage."

8. **Project Modification.** Any modifications of the project as proposed and described in this Order, shall require submittal of a new Report of Waste Discharge (ROWD) and appropriate filing fee, at least 120 days prior to commencing the discharge. In addition, Newhall Land shall file a ROWD for the proposed project, should any person discharge waste, or propose to discharge waste, other than into a community sewer system, which could affect the quality of the waters of State as required by section 13260(a) of the California Water Code.

9. **Project Abandonment.** The terms of this Order continue to apply upon abandonment of all or any portion of the NRSP or RMDP by Newhall Land. Newhall Land may be required to restore those areas affected by its activities.

4.0 Enforcement

1. Newhall Land or its agents shall report any noncompliance with this Order. Any such information shall be provided electronically to the Executive Officer or delegatee within 24 hours from the time Newhall Land becomes aware of the circumstances. A written submission shall also be provided within five days of the time Newhall Land becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

   a) In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under State law.

   b) In response to a suspected violation of any condition of this Order, the State Water Board or Regional Board may require the holder of any permit or license subject to this Order to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board or Regional Board deems appropriate, provided that the burden, including costs, of the reports shall be a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

   c) In response to any violation of the conditions of this Order, the State Water Board or Regional Board may add to or modify the conditions of this Order as appropriate to ensure compliance.

2. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a) Violation of any term or condition contained in this Order;

   b) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;

   c) Endangerment to public health or environment that can only be regulated to acceptable levels by Order modification or termination.

3. **Additional Reports**. The Dischargers shall furnish, within a reasonable period of time, any information the Regional Board may request to determine whether or not cause exists for modifying, revoking and reissuing, or terminating this Order. The Dischargers shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

4. **Discharge a Privilege.** All discharges of waste into the waters of the State are privileges, not rights. In accordance with California Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification.

5.0 Term

1. This Order shall take effect upon Regional Board adoption.

2. Except as provided for in Findings G. 4, and H. 15, and Provisions 3. 35, 3.3 5, 3.3 7, and 4. 2 this Order (or as revised) shall remain in effect for the duration of the Section 404 Permit issued for the RMDP (Permit No. 2003-01264-AOA), but not longer than 20 years.

3. The Regional Board may revise the requirements of this Order at any time as necessary to protect water quality, pursuant to California Water Code section 13263(e).

   The Regional Board may add to or modify the conditions of this Order due to

   a. Acquisition of newly-obtained information that demonstrate the need for new requirements in order to ensure protection of water quality standards or would have justified the application of different conditions if known at the time of Order adoption;
   b. To address changed conditions of the project identified in required reports or by the project proponent;
   c. to incorporate revised conditions as a result of new regulation or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or Section 303 of the Clean Water Act.

I, Samuel Unger, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on September 14, 2012.

Ordered by: Samuel Unger

Samuel Unger
Executive Officer

TABLES

Table 1a: Basin Plan Beneficial Uses
Surface Waters

Receiving Water Name	Beneficial Use(s)
Santa Clara River Reach 5 (WBD No. 180701020403) **Project Discharge Point**	Existing: industrial service supply (IND), industrial process supply (PROC), and agricultural supply (AGR); groundwater recharge (GWR); freshwater replenishment (FRSH); water contact (REC-1) and non-contact water recreation (REC-2); rare, threatened, or endangered species (RARE); warm freshwater habitat (WARM), wildlife habitat (WILD), and wetland[1] habitat (WET). Potential: Municipal and domestic water supply (MUN).*
Santa Clara River Reach 4a and 4b (WBD No. 180701020802 and 180701020403)	Existing: IND, PROC, AGR, GWR, FRSH, REC-1, REC-2, RARE; migration of aquatic organisms (MIGR); WARM, WILD, WET. Potential: MUN.
Santa Clara River Reach 3 (WBD No. 180701020903, 180701020902 and 180701020803)	Existing: IND, PROC, AGR, GWR, FRSH, REC-1, REC-2, RARE, MIGR, WARM, WILD, and WET. Potential: MUN.
Santa Clara River Reach 2 (WBD No. 180701020903 and 180701020904)	Existing: IND, PROC, AGR, GWR, FRSH, REC-1, REC-2, RARE, MIGR, WARM, WILD, and WET Potential: MUN.
Santa Clara River Reach 1 (WBD No. 180701020904)	Existing: IND, PROC, AGR, GWR, FRSH, REC-1, REC-2, RARE, MIGR, WARM, COLD, WILD, and WET. Potential: MUN.
Santa Clara River Estuary (WBD No. 180701020904)	Existing: navigation (NAV), REC-1, REC-2, commercial and sport fishing (COMM), estuarine habitat (EST), marine habitat (MAR), WILD, WET, RARE, MIGR, spawning, reproduction, and/or early development (SPWN).

* The potential municipal and domestic supply (p* MUN) beneficial use for the waterbody is consistent with the State Water Resources Control Board Order No. 88-63 and Regional Water Board Resolution No. 89-003; however, the Regional Water Board has only conditionally designated the MUN beneficial use of the surface water and at this time cannot establish effluent limitations designed to protect the conditional designation.

1 Waterbodies designated as WET may have wetlands habitat associated with only a portion of the waterbody. Any regulatory action would require a detailed analysis of the area.

Table 1b: Basin Plan Beneficial Uses
Groundwaters

Receiving Water Name	Beneficial Use(s)
Santa Clara River Valley East (DWR Basin No. 4-4.07) **Project Discharge Point**	South Fork – Existing: Municipal and domestic water supply (MUN), industrial service supply (IND), industrial process supply (PROC), and agricultural supply (AGR); Placerita Canyon – Existing: MUN, IND, PROC, AGR Santa Clara/Bouquet & San Francisquito Canyons - Existing: MUN, IND, PROC, AGR Castaic Valley – Existing: MUN, IND, PROC, AGR Saugus Aquifer – Existing: MUN

Table 2
Newhall Ranch
Project Development Phasing

Phase	Village	Anticipated Time Frame (1)(2)
1	Landmark Village	3-5 years
2	Mission Village	3-5 years
3	WRP / Utility Corridor	3-5 years
4	Homestead Village South	3-5 years
5	Homestead Village North	5-10 years
6	Potrero Village	10-15 years

(1) Phasing time frames would begin with the approval of the Project 401 Certification/ WDR.

(2) Time Frames indicate the approximate time frame for development to commence. Any given area could take from 3 to 5 years to complete.

Table 3
Santa Clara River
Proposed RMDP Features and Impacts

Feature Description	Quantity or Linear Feet	Fill of Waters of the United States (including wetlands)		Fill of Wetlands [1]	
		Temp Impact (ac.)	Perm Impact (ac.)	Temp Impact (ac.)	Perm Impact (ac.)
Landmark Village					
River Bank Stabilization / Flood Protection	11,232	0.42	0.06	0	0
Storm Drain Outlets	12	0	0	0	0
Subtotal		**0.42**	**0.06**	**0**	**0**
Mission Village					
Commerce Center Drive Bridge	1	2.78	2.08	1.45	1.57
River Bank Stabilization / Flood Protection	1,866	2.48	0.15	0.16	0.05
Drainage Converted to Buried Storm Drain[2]	--	0	0.04	0	0.01
Storm Drain Outlets	3	0	0.01	0	0
Drainage Displaced by Development[2]	--	0	0.08	0	0.07
Subtotal		**5.26**	**2.36**	**1.61**	**1.70**
Utility Corridor / SR-126 Widening					
River Bank Geofabric Stabilization / Flood Protection	4,300	0	0	0	0
River Bank Stabilization / Flood Protection	3,130	2.37	1.37	2.36	1.33
SR 126 Bridge over Castaic Creek	1	0.98	0.44	0	0
SR 126 Widening at Chiquito Canyon Confluence	1	0	0	0	0
SR 126 Widening at San Martinez Grande Canyon Confluence	1	0	0	0	0

Feature Description	Quantity or Linear Feet	Fill of Waters of the United States (including wetlands)		Fill of Wetlands [1]	
		Temp Impact (ac.)	Perm Impact (ac.)	Temp Impact (ac.)	Perm Impact (ac.)
Subtotal		**3.35**	**1.81**	**2.36**	**1.37**
Newhall Ranch WRP Bank Protection Construction Impacts					
Santa Clara River	4,625	2.53	0.39	2.53	0.39
Subtotal		**2.53**	**0.39**	**2.53**	**0.39**
Homestead South Village					
Long Canyon Bridge	1	1.72	1.16	1.22	1.16
River Bank Stabilization / Flood Protection	6,070	0.13	0	0	0
Haul Route and Restoration / Mitigation	2	0.64	0	0.14	0
Subtotal		**2.49**	**1.16**	**1.36**	**1.16**
Potrero Village					
Haul Route and Restoration / Mitigation	--	1.65	0	1.17	0
Subtotal		**1.65**	**0**	**1.17**	**0**
GRAND TOTAL		**15.70**	**5.78**	**9.03**	**4.62**

~~d.~~1) Wetland impact acreage is a subset of the waters impact acreage.

~~e.~~2) Impacts related to Bridge Abutment, parallel to Santa Clara River bank.

Table 4
Minor Tributary Drainages
Proposed Features and Impacts

Tributary	Feature			Permanent Fill of Waters of The United States (Ac.)	Preserved Waters (Ac.)	Preserved Waters (lf)
	Converted to Buried Storm Drain (linear feet)	Debris Basins (No.)	Regional Water Quality Basins (No.)			
Landmark Village						
On-Site Tributaries						
Agricultural Ditch	1,479	0	0	1.37	0.18	329
Subtotal	**1,479**	**0**	**0**	**1.37**	**0.18**	**329**
Mission Village						
On-Site Tributaries						
Dead End Canyon	1,931	0	0	1.30	0	0
Exxon Canyon	1,754	0	0	0.44	0.77	1,788
Middle Canyon	7,443	1	1	5.59	2.19	143
Magic Mountain Canyon	6,111	4	1	6.37	0	0
Unnamed Canyon D	1,241	1	0	0.69	0.14	250
Subtotal on-site	***18,480***	***6***	***2***	***14.39***	***3.1***	***2,181***
Off-Site Tributaries						
Unnamed Canyon 1	4,647	3	0	0.33	0	0
Unnamed Canyon 2	416	1	0	0.33	0	0
Subtotal off-site	***5,063***	***4***	***0***	***0.66***	***0***	***0***
Subtotal	**23,543**	**10**	**2**	**15.05**	**3.10**	**2,181**
Utility Corridor / SR-126 Widening						
Mid-Martinez Canyon	550	0	0	0.12	0	0
Subtotal	**550**	**0**	**0**	**0.83**	**0**	**0**

Newhall Ranch WRP						
Off-Haul Canyon	450	0	0	0.70	0	0
Subtotal	**450**	**0**	**0**	**0.70**	**0**	**0**
Homestead South Village						
Ayers Canyon Culvert Road Crossing	0	0	0	0.15	2.42	2,363
Humble Canyon	421	5	0	0.14	1.77	5,116
Unnamed Canyon B	1,004	0	0	0.45	0.27	568
Unnamed Canyon C	402	3	0	0.18	0.49	869
Subtotal	**5,327**	**8**	**0**	**0.92**	**4.95**	**8,916**
Homestead North Village						
Homestead Canyon	609	1	0	0.22	0	0
Mid-Martinez Canyon	3,796	1	0	1.84	0	467
Off-Haul Canyon	5,314	6	0	4.76	0.32	3,014
Unnamed Canyon A	0	0	0	0	0.78	1,293
Subtotal	**9,719**	**8**	**0**	**6.82**	**1.10**	**4,774**
Grand Total	**37,568**			**25.69**	**9.33**	**16,200**

Table 5
Lion Canyon
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States	
	Temp Impact (ac.)	Perm Impact (ac.)
Mission Village		
Grade Stabilized - Earthen Channel Bottom (5,835 lf)	1.94	0.64
Buried Storm Drain (2,595 lf)	0	1.26
Displaced by Development	0	0.38
Road Culvert (1)	0	0.03
Grade Control Structures (26)	0.24	0.30
Debris Basins (4), Regional Water Quality Basin (1)	0	0
Subtotal	**2.18**	**2.61**
Homestead South Village		
Buried Storm Drain (3,500 lf) (West Fork)	0	2.07
Subtotal	**0**	**2.07**
Total	**2.18**	**4.68**

Table 6
Homestead South Village Project - Long Canyon
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States	
	Temp Impact (ac.)	Perm Impact (ac.)
Channel to be Regraded / Reconstructed (8,742 lf)	0.01	3.94
Buried Storm Drain (961 lf)	0	0.67
Road Culverts (4)	0	0.12
Water Quality Treatment Basins	0	0.50
Total	**0.01**	**5.23**

Table 7
Homestead North Village - Chiquito Canyon
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States	
	Temp Impact (ac.)	Perm Impact (ac.)
Bank Stabilization – Earthen Channel Bottom (4,080 lf)	3.10	0.60
Buried Storm Drain (2,571 lf)	0	0.84
Road Culverts (3)	0	0.17
Drainage Displaced by Development	0	1.29
Grade Control Structures	0.30	0.29
Water Quality Treatment Basins / Open Space	0	1.51
Total	**3.40**	**4.70**

Table 8

Homestead North Village - San Martinez Grande Canyon
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States	
	Temp Impact (ac.)	Perm Impact (ac.)
Bank Stabilization – Earthen Channel Bottom (7,307 lf)	0.95	0.04
Road Culverts (2)	0.09	0.09
Grade Control Structures	0.02	0.09
Total	**1.06**	**0.22**

Table 9
Potrero Village - Potrero Canyon
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States		Fill of Wetlands	
	Temp Impact (ac.)	Perm Impact (ac.)	Temp Impact (ac.)	Perm Impact (ac.)
Bank Stabilization - Earthen Channel Bottom (13,743 lf)	3.57	0.04	0.99	0
Road Culverts (3) and Road Bridge (1)	0.12	0.42	0.07	0.07
Open Space	0	0.08	0	0
Grade Control Structures (60)	1.98	1.52	0.56	0.42
Total	**5.67**	**2.06**	**1.61**	**0.49**

(1) wetland impact acreage is a subset of the waters impact acreage

Table 10
Salt Creek Visitor Center / Restoration
Proposed Features and Impacts

Feature (Linear Feet or Number of Features)	Fill of Waters of the United States		Fill of Wetlands	
	Temp Impact (ac.)	Perm Impact (ac.)	Temp Impact (ac.)	Perm Impact (ac.)
Bank Stabilization (1,841 lf)	0	0	0	0
High Country Salt Creek Trail	0	0.22	0	0.01
Restoration / Mitigation	7.28	0	1.14	0.0
Total	**7.28**	**0.22**	**1.14**	**0.01**

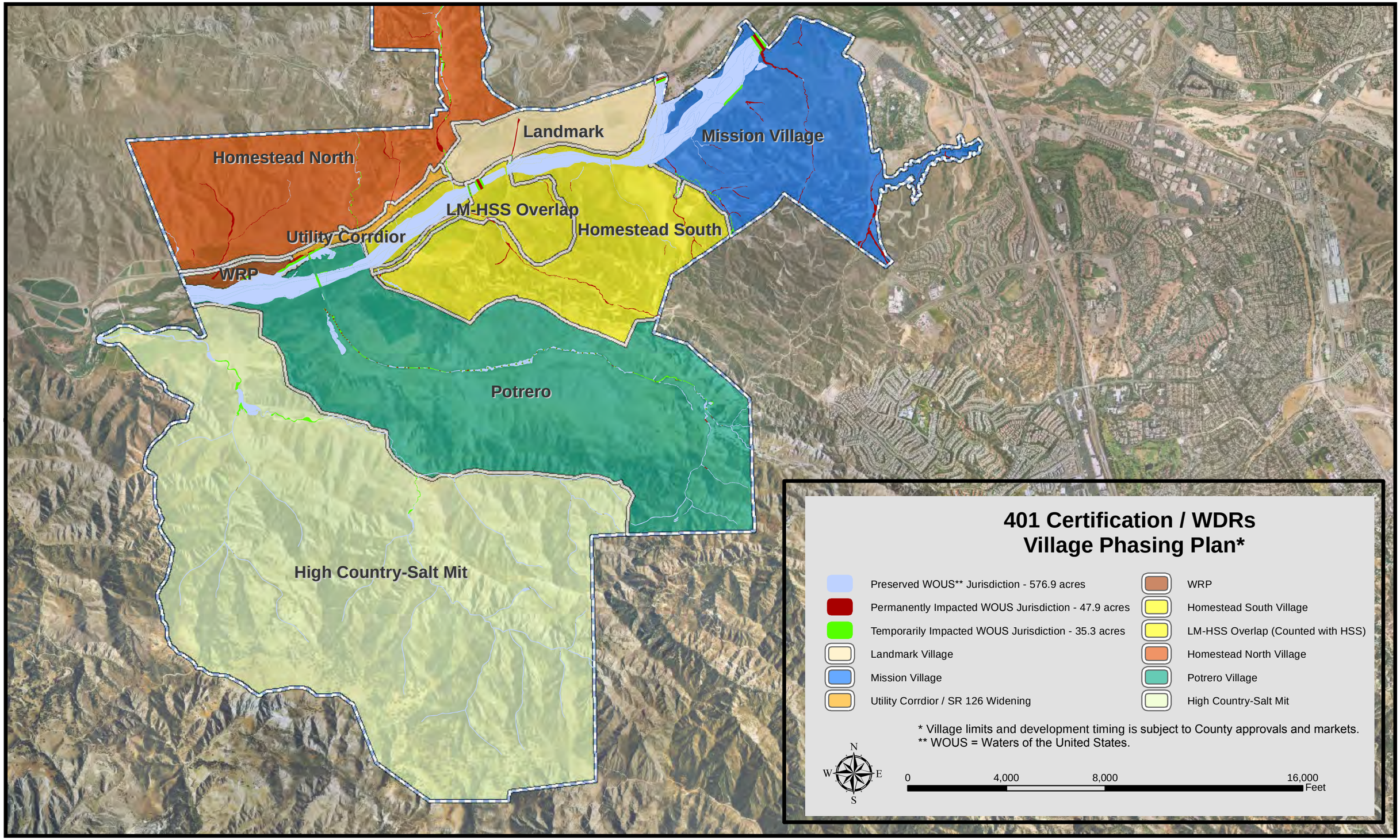
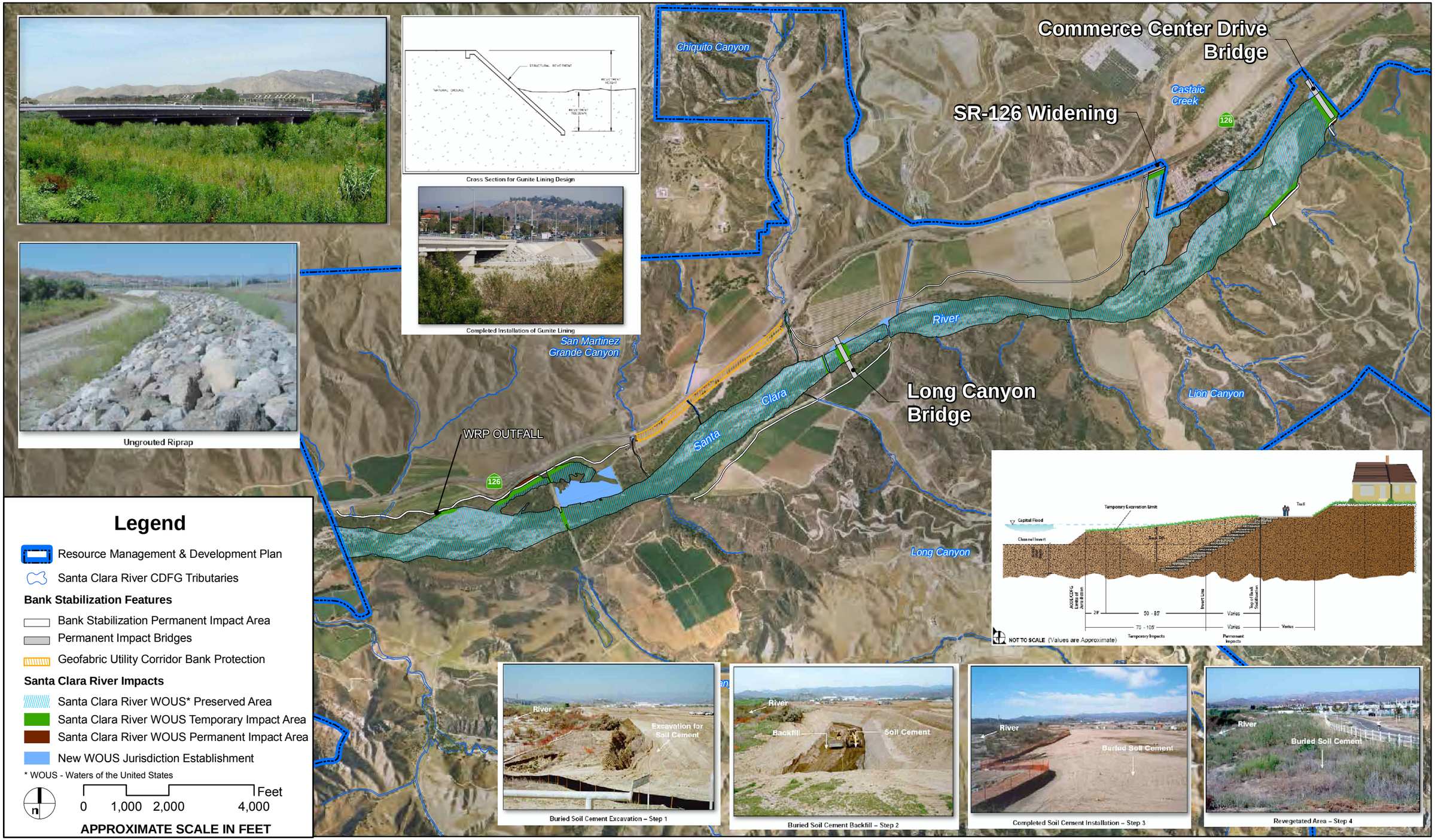


FIGURE 1

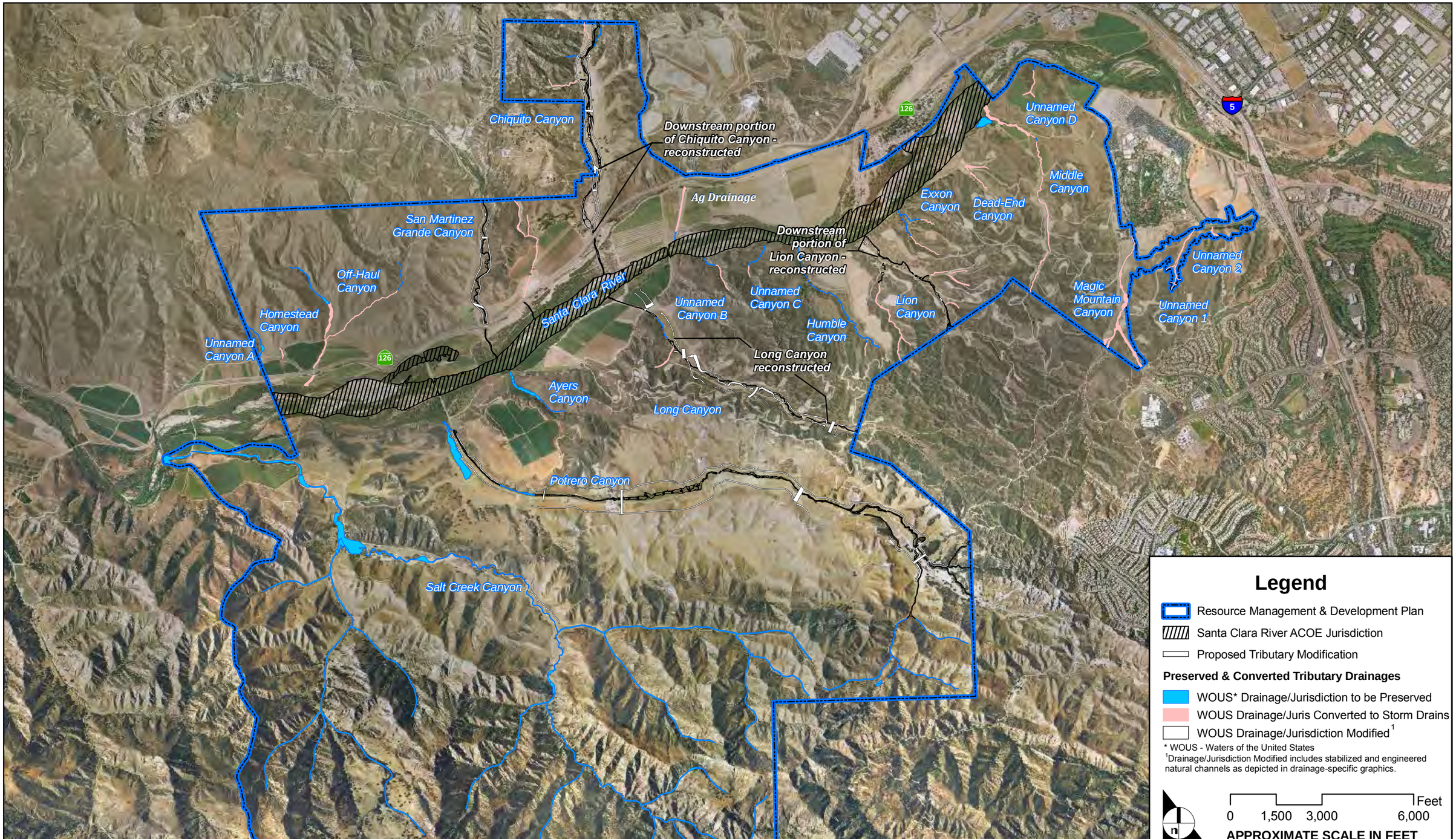
Newhall Ranch RMDP WDR Village Phasing Plan



SOURCE: PACE 2010

FIGURE 2

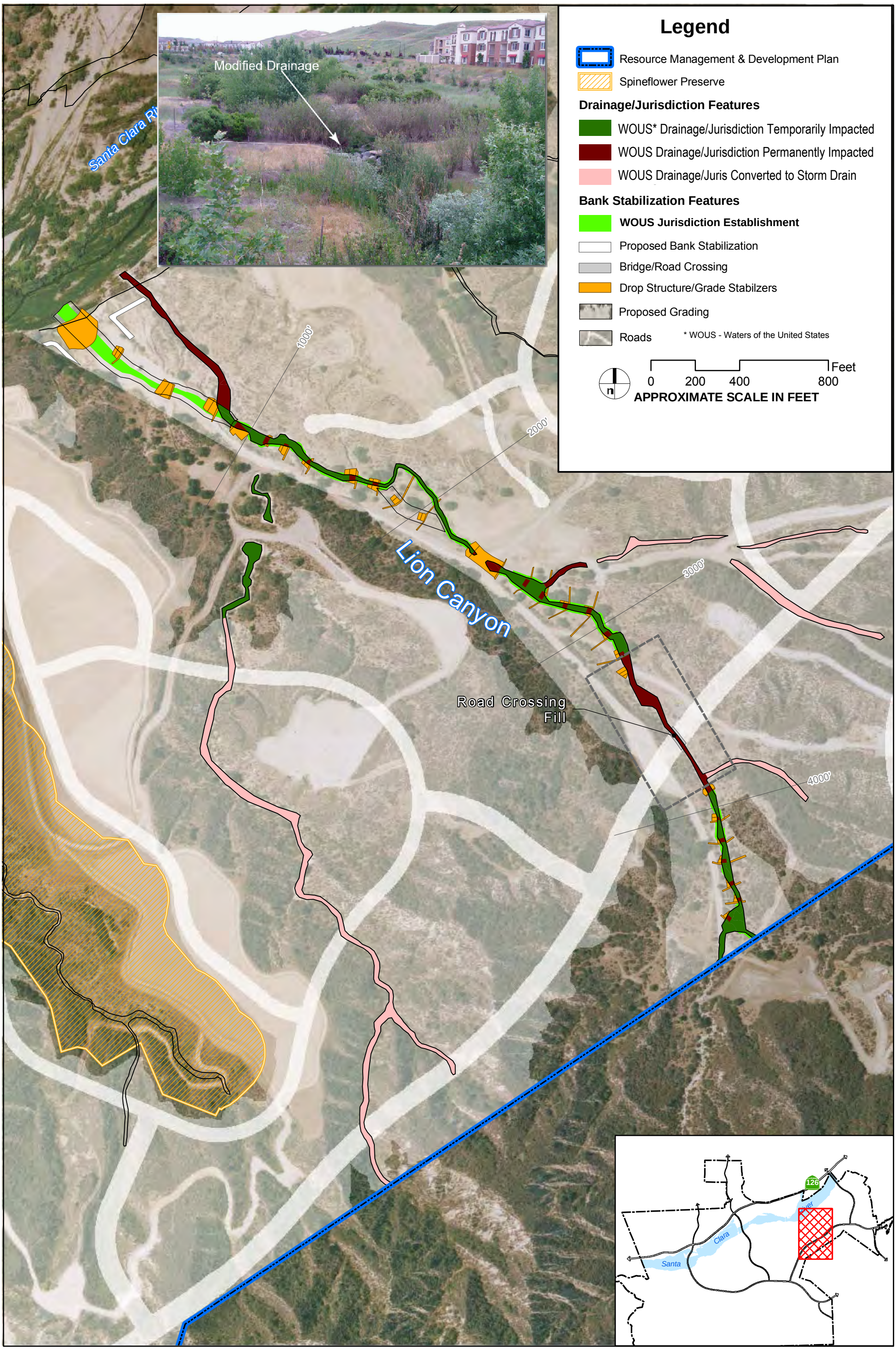
NEWHALL RANCH RMDP
SANTA CLARA RIVER MAJOR FEATURES



SOURCE: PACE - 2010

FIGURE 3

NEWHALL RANCH RMDP
MODIFIED, CONVERTED, AND PRESERVED TRIBUTARY DRAINAGES



SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 4

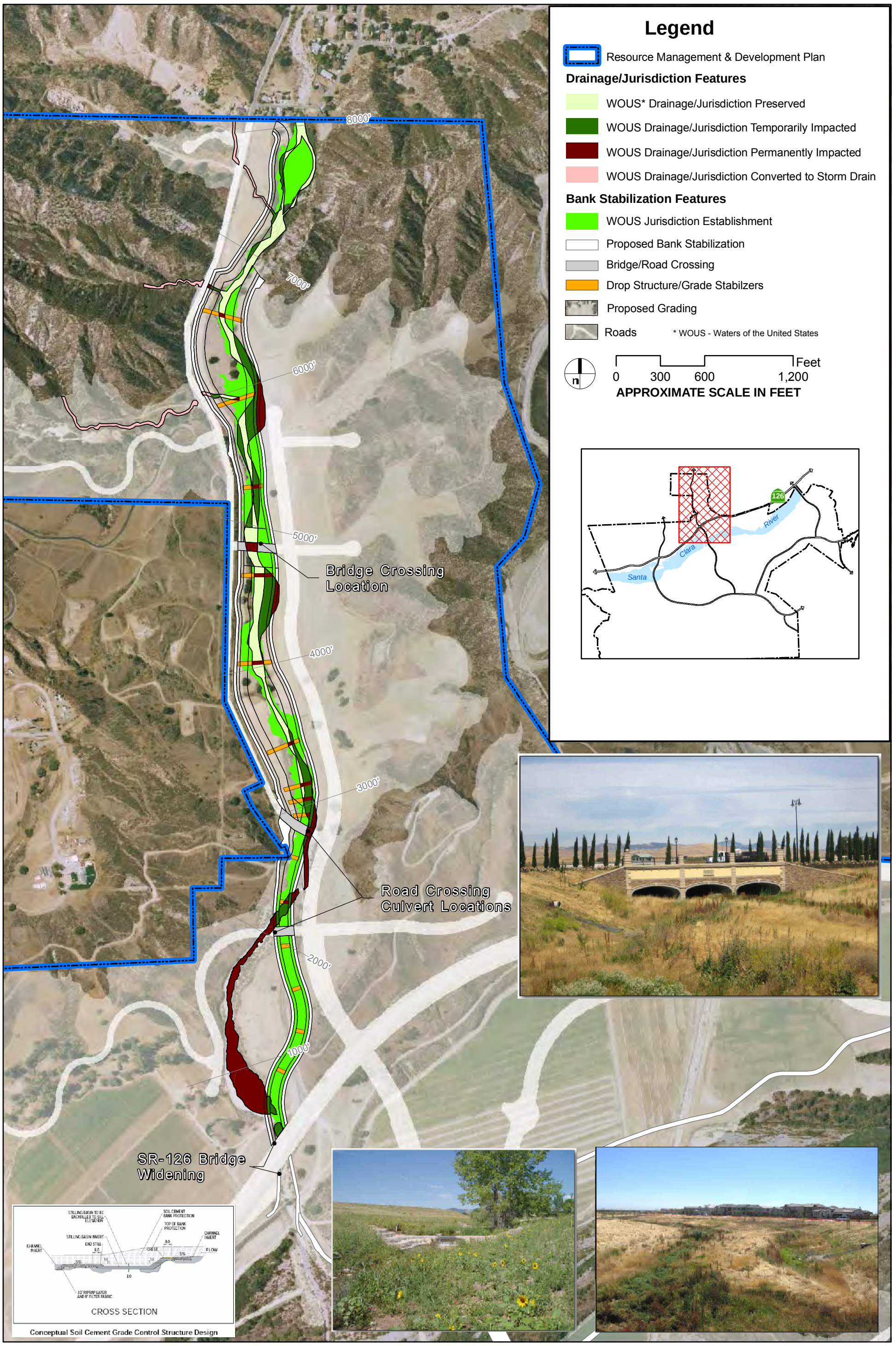
LION CANYON DETAIL - NEWHALL RANCH RMDP
RMDP TRIBUTARY TREATMENTS

SOURCE PACE 2 1

Note Location of drop structures/grade stabilizers are approximate.

FIGURE 5

LONG CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

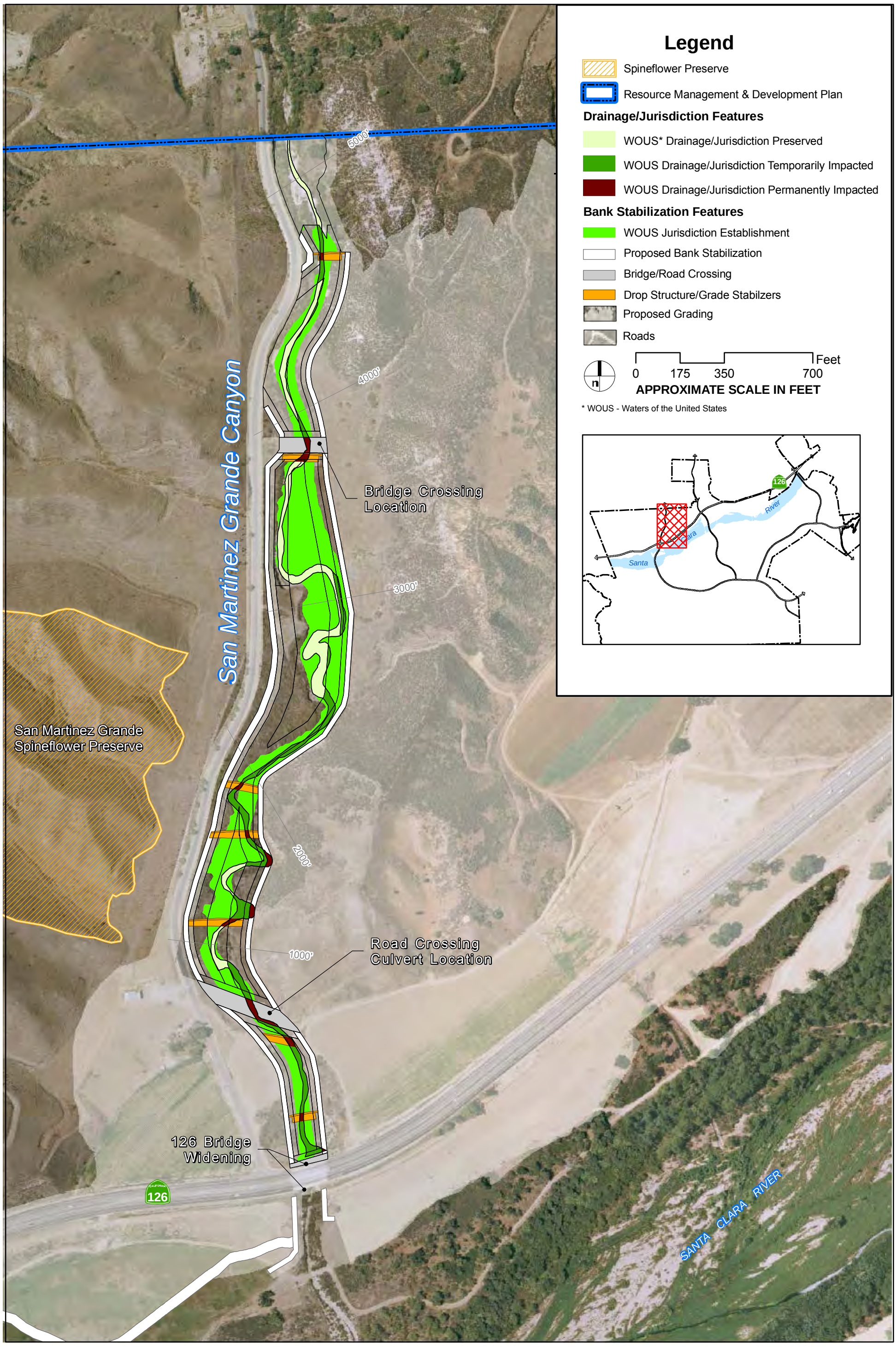


SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 6

CHIQUITO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS



SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 7

SAN MARTINEZ GRANDE CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 8

POTRERO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

Attachment 3 to Letter from Matt Carpenter to Aaron O. Allen

FINAL NEWHALL RANCH PROJECT DESCRIPTION

(August 2011)

1.0 OVERVIEW

The Final Newhall Ranch Project (LEDPA), shown in **Figure 1**, is a modified version of the Draft LEDPA, which was described in the Final EIS/EIR. Compared to the Draft LEDPA, the biggest change is the avoidance of permanent impacts to an additional 18.4 acres of waters of the United States, including 3.5 acres of wetlands in the middle reach of Potrero Canyon. This avoidance was achieved primarily by reconfiguring the development areas in Potrero Canyon and relocating the proposed manufactured open space to be adjacent to the drainage, eliminating the need for geotechnical remediation to support development adjacent to the drainage. Additionally, a small development area in San Martinez Grande Canyon will be relocated, allowing proposed bank stabilization to be constructed entirely in upland areas and thereby reducing temporary impacts to aquatic resources in San Martinez Grande by 0.5 acre. The changes in Potrero Canyon reduce net developable acreage (NDA) by approximately seven acres compared to the Draft LEDPA.

Based on input received from the California Department of Fish and Game (CDFG), the LEDPA also provides increased spineflower preserve acreage, in part by adding two new spineflower preserves — the Magic Mountain and Spring preserves. The addition of spineflower acreage, and related minor changes to the configuration of some lot boundaries, reduces NDA by approximately 10 acres compared to the Draft LEDPA (in addition to the seven acres of NDA lost as a result of avoidance in Potrero Canyon). This brings the total NDA for the LEDPA to 2570 acres.

The LEDPA also provides larger riparian corridors within five major tributaries. As with the Draft LEDPA, there would only be two bridges crossing the Santa Clara River (Commerce Center Drive Bridge and the Long Canyon Road Bridge). The Potrero Canyon Road Bridge would not be constructed, reducing impacts to jurisdictional waters and wetlands in the Santa Clara River and lower Potrero Canyon. In addition, a 19.3-acre wetland mitigation area would be established in lower Potrero Canyon, contiguous with the existing lower mesic meadow (CAM). In Long canyon, most of the existing drainage would be modified and a new channel constructed that will replace the existing function and values; only 5.24 acres would be used for project mitigation. The excess in Long Canyon will be available for permittee responsible mitigation for other than for Newhall Ranch or for mitigation banking under 33 CFR Part 332. .In the three other major tributary drainages, Lion, San Martinez Grande, and Chiquito canyons, the project would incorporate limited channel grading to expand the drainages and adjacent riparian areas and realign their banks. The remainder of the jurisdictional areas in Potrero, Lion, San Martinez Grande and Chiquito Canyons would be avoided.

Overall, the LEDPA would permanently fill approximately 47.9 acres of waters of the United States, which is 45.4 acres less than the proposed Project and 18.4 acres less than the Draft LEDPA. It would temporarily disturb 35.3 acres, which is 2 acres more than the proposed Project and 3.1 acres more than

the draft LEDPA. Of those impacts, 5.8 acres of permanent impact and 15.7 acres of temporary impact to waters of the United States would occur in the mainstem of the Santa Clara River. The remaining 42.1 acres of permanent impact and 19.6 acres of temporary impact to waters of the United States would occur in the tributary drainages within the Project area. Of the total 660.1 acres of waters of the United States present on the RMDP site, the LEDPA would avoid permanent or temporary impacts to approximately 87 percent (576.9 acres), compared to 80 percent avoidance under the proposed Project and 85 percent avoidance for the Draft LEDPA.

Implementation of the LEDPA would permanently disturb 5.1 acres of wetlands, 15.4 acres less than the proposed Project and 2.6 acres less than the Draft LEDPA. The LEDPA would temporarily disturb 11.8 acres of wetlands, approximately 0.6 acres more than the proposed Project and 0.4 acres more than the draft LEDPA. These impacts are a subset of the total impacts to waters of the United States described in the previous paragraph. In total, the LEDPA would avoid permanent or temporary impacts to approximately 94 percent of the 276.9 acres of wetlands on site.

The mitigation associated with the LEDPA will substantially increase the acreage of waters of the United States and functions/services and values of waters of the United States. The LEDPA would provide 114.04 acres of compensatory mitigation (creation and enhancement of jurisdictional areas), with a 2.4 to 1 mitigation ratio for permanent impacts to waters of the United States and a 6.9 to 1 mitigation ratio for permanent impacts to wetland waters of the United States. In addition, the LEDPA would preserve and protect in perpetuity approximately 612.2 acres of waters that are not permanently impacted, including 271.8 acres of wetlands and would place a restrictive covenant for flood protection on an additional 119 acres, consisting of approximately 89 acres of waters of the United States and 30 acres of adjacent upland floodplain area in the Santa Clara River immediately downstream of the RMDP area, as shown on Figure 20 and Figure 9, respectively, of the Mitigation Plan (Dudek, 2011). The ratio of preserved acres to permanently impacted acres of waters of the United States is approximately 14.6 to 1, and 53 to 1 for impacted wetlands. The LEDPA also would comply with all of the mitigation measures required by CDFG under the streambed alteration program created by Fish & Game Code sections 1602 and 1605.

In addition, as described in Section 5.0, the LEDPA will incorporate advanced Low Impact Development (LID) measures, consistent with a LID Performance Standard that was developed based on consultation with the Corps, the U.S. Environmental Protection Agency and the Regional Water Quality Control Board.

As described in Section 7.0, by October 15, 2028, oil and gas wells located in areas scheduled for future protection under conservation easements or deed restrictions will be plugged and abandoned and surrounding areas remediated. Within 180 days after the Permit is issued, the Project will install suitable erosion control best management practices (BMPs) between those oil wells and the adjacent waters of the United States and maintain such BMPs in good working condition until the wells are abandoned and remediated

The LEDPA is further described below.

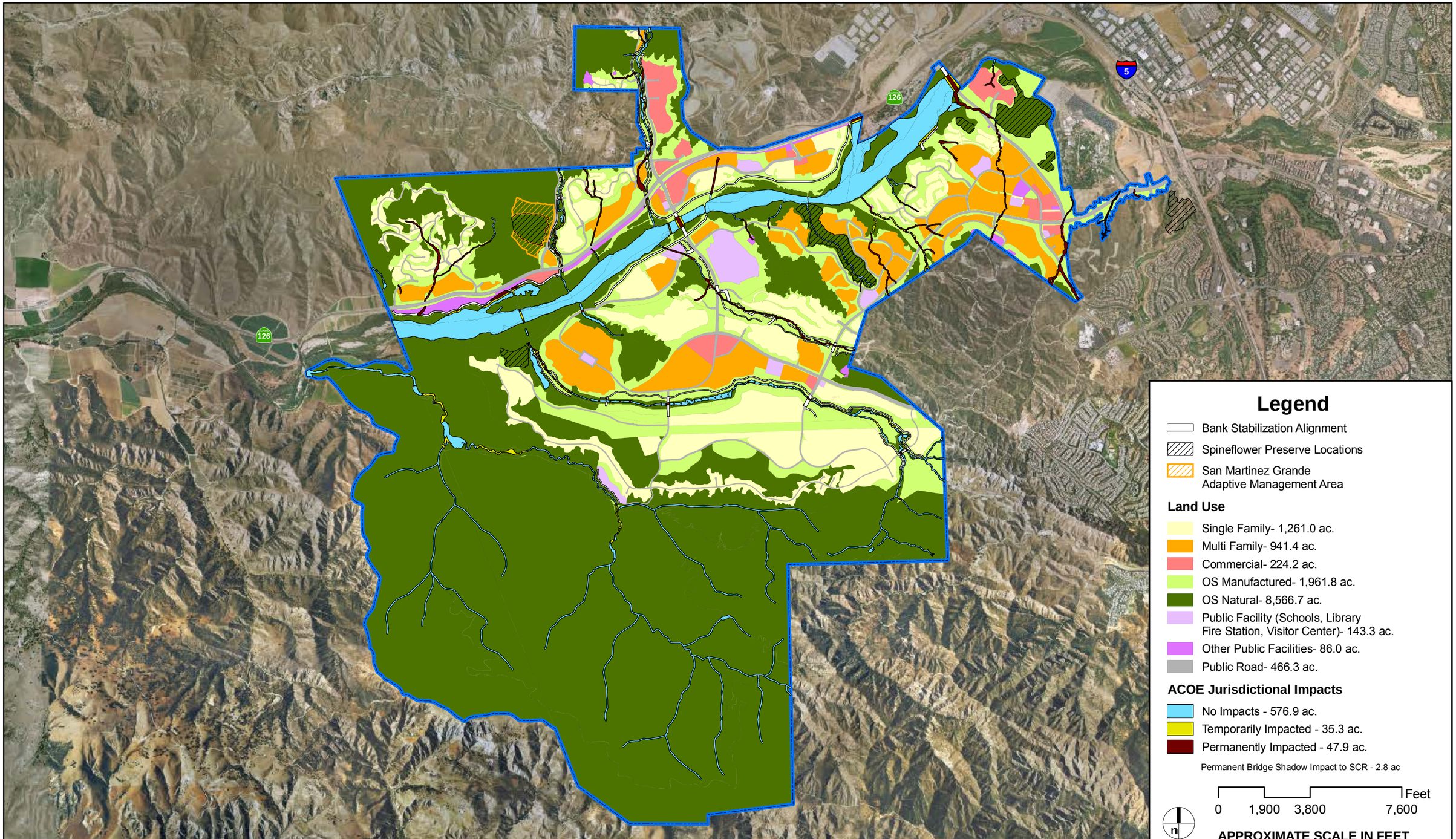
2.0 DESCRIPTION OF REGULATED ACTIVITIES

2.1 RMDP Component Of The Project

Infrastructure would be constructed in and adjacent to the Santa Clara River and tributary drainages within the Project area. A description of the infrastructure and related channel design elements is provided below.

2.1.1 Santa Clara River

Figure 2 depicts the locations of the major RMDP infrastructure that would be provided along the Santa Clara River relative to jurisdictional areas. **Table 1** summarizes the characteristics of this infrastructure.



SOURCE: HUNSAKER 2010/PACE 2010

FIGURE 1

NEWHALL RANCH RMDP

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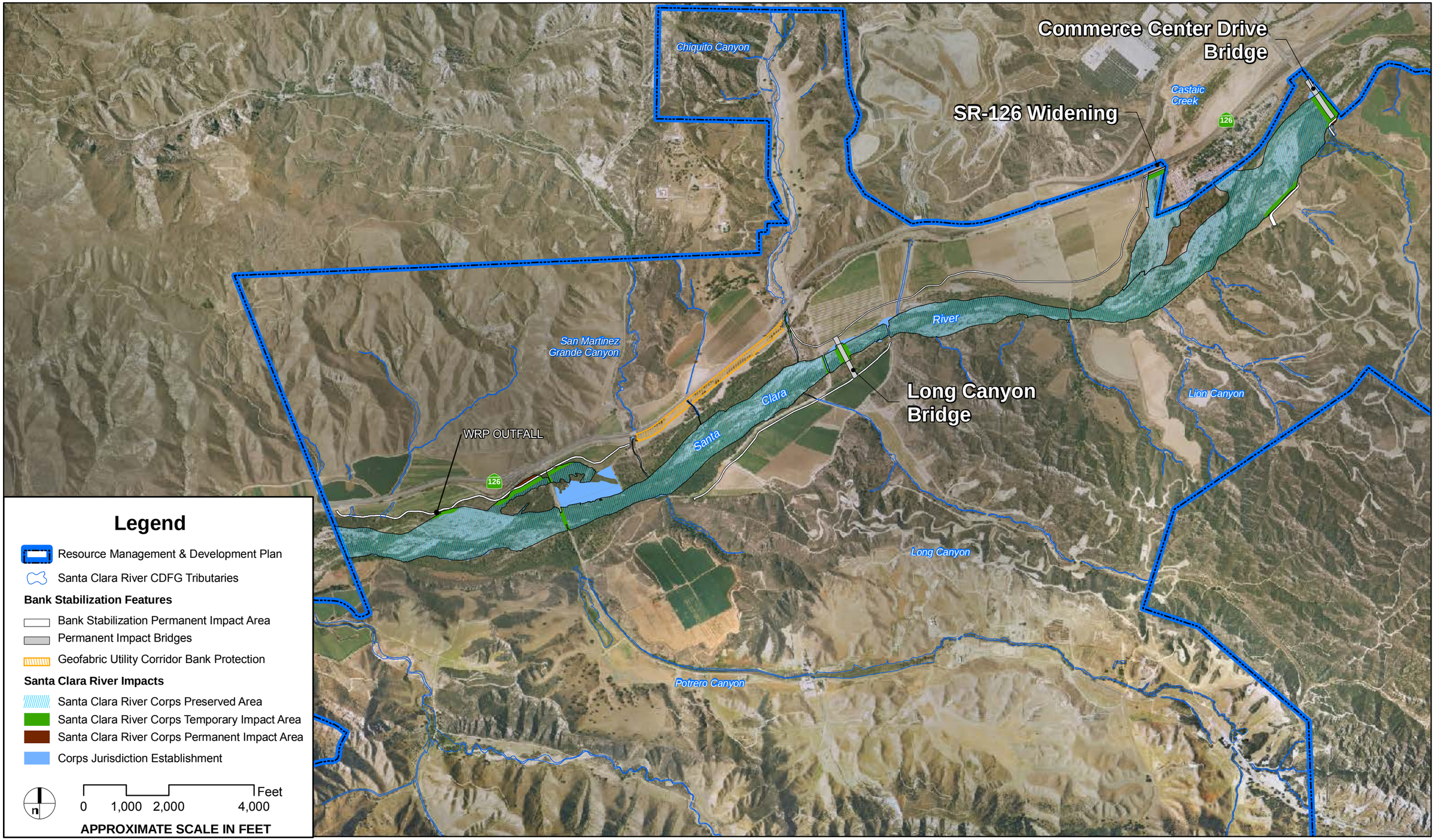


SOURCE: PACE 2010

FIGURE 2

NEWHALL RANCH RMDP
SANTA CLARA RIVER MAJOR FEATURES

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-2_FinalLedpaSantaClaraRiverMajorFeatures_PC2_20101208.mxd

Table 1
Santa Clara River Major RMDP Infrastructure

Santa Clara River Location	Bank Stabilization (lf)	Outlets (No.)	Bridges			
			Length (lf)	Width (lf)	Piers (No.)	Vertical Clearance (ft)
Bridges						
Commerce Center Drive Bridge	-	-	1,200	100	9	22
Long Canyon Road Bridge	-	-	980	100	9	31-40
Banks			-	-	-	-
North River Bank	19,158	25	-	-	-	-
South River Bank	7,693	10	-	-	-	-
Total	**26,851**	**35**	**-**	**-**	**-**	**-**

Source: Newhall, 2010.

As shown in **Figure 2**, one proposed bridge, Long Canyon Road Bridge, and one previously approved bridge, Commerce Center Drive Bridge, would be located across the main stem of the Santa Clara River. The Corps permit would not authorize construction of the Potrero Canyon Road Bridge, thereby reducing impacts to jurisdictional waters and wetlands in the Santa Clara River and lower Potrero Canyon. **Table 1** documents the length, width, and vertical clearance of the two bridges, as well as the number of piers supporting each bridge.

Buried bank stabilization would be installed in upland and riparian areas along approximately one-half of the north bank (19,158 lf) and one-third of the south bank (7,693 lf) of the Santa Clara River. Twenty-five storm drain outlets would be installed along the north bank and 10 outlets on the south bank of the River (35 storm drain outlets total). The WRP outfall to the Santa Clara River also would be constructed. Geofabric bank protection is proposed on the north side of the Santa Clara River between San Martinez Grande Canyon and Chiquito Canyon for the utility corridor.

Figure 2 also depicts the proposed RMDP riparian/upland revegetation zones in green and the newly created river channel in blue.

2.1.1 Tributary Drainages

Figure 3 illustrates the modified, converted, and preserved tributary drainages within the Project area under the LEDPA. **Table 2** describes the characteristics of the tributary drainages. Overall, the Project would avoid or restore 194,866 lf of on-site drainages, which is 81 percent of the total 242,061 lf of jurisdictional drainages on the Project site. The acreage of the avoided and restored drainages will exceed the acreage existing under baseline conditions. The Project would convert 47,195 lf of tributary channel to buried storm drain; install 67,537 lf of bank stabilization in tributary drainages outside of

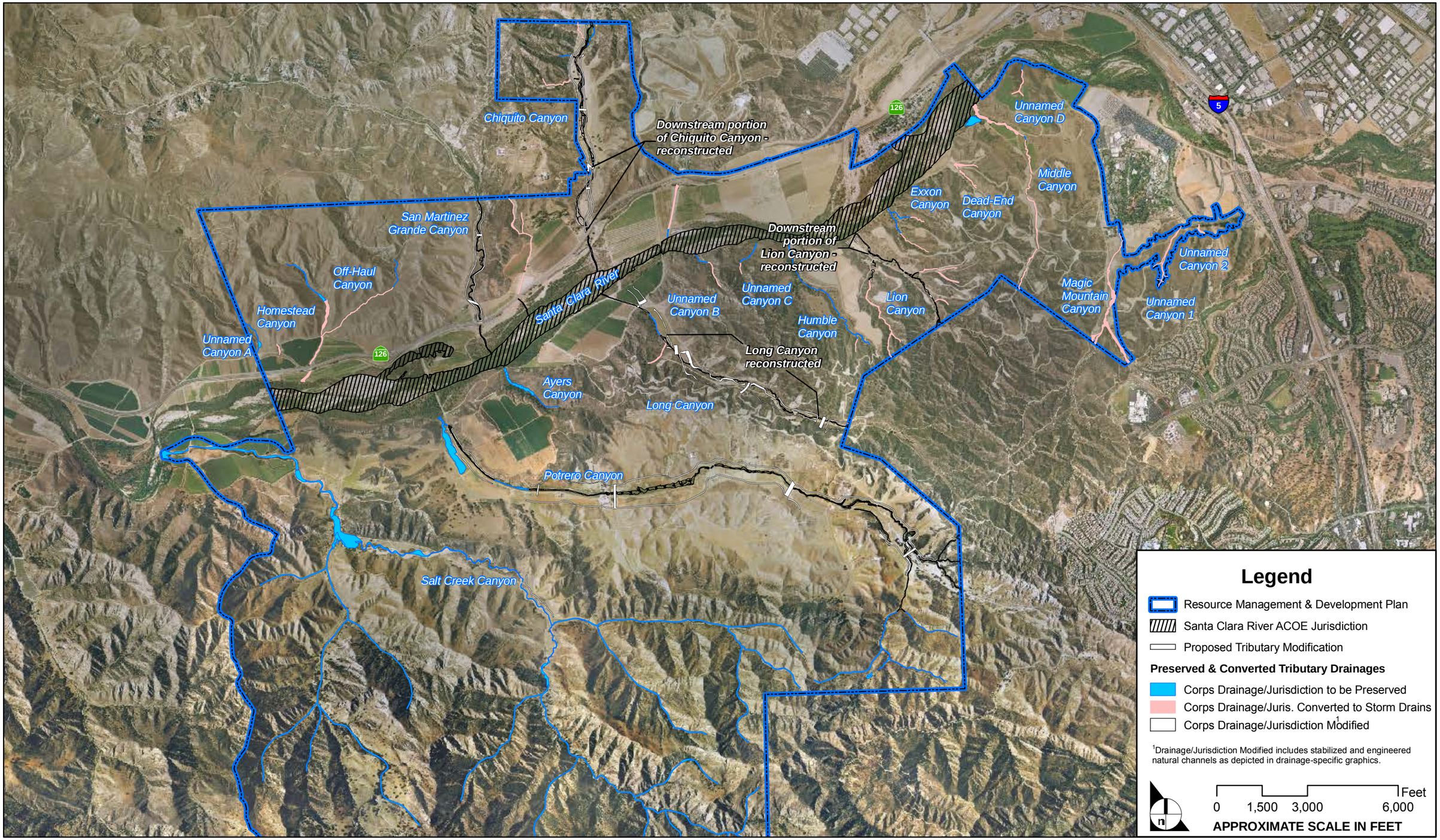
Corps jurisdiction; and provide three bridges over tributaries and 13 culvert road crossings over tributaries.

Chiquito Canyon. Under the LEDPA, Chiquito Canyon would require stabilizing treatments to protect the channel and surrounding development from excessive vertical scour and lateral channel migration, as shown on **Figure 4**. The existing drainage would remain mostly intact but would be permanently altered by construction of stabilization elements, including buried bank stabilization and grade stabilization structures. Approximately 7,298 lf of buried bank stabilization would be installed along the west bank and 5,959 lf of buried bank stabilization would be installed along the east bank of Chiquito Canyon outside of Corps jurisdiction. In addition, approximately 2,571 lf of drainage would be converted to buried storm drain. Two culverted road crossings would be installed along Chiquito Canyon to accommodate traffic circulation, and a culverted road extension would be installed for the Caltrans SR-126 road widening project.[1] **Table 2** summarizes the proposed changes.

San Martinez Grande Canyon. Under the LEDPA, the Project would construct a soft-bottom channel to incorporate the existing alignment of San Martinez Grande Canyon Road between SR-126 and the northern Project boundary, as shown on **Figure 5**. Portions of the existing drainage would be permanently altered by construction of the modified tributary drainage, including installation of grade stabilizing structures and buried bank stabilization outside of Corps jurisdiction. Approximately 3,423 lf of buried bank stabilization would be installed along the west bank and 3,884 lf of buried bank stabilization would be installed along the east bank of San Martinez Grande Canyon. As shown, one bridge and one culverted road crossing would be installed along San Martinez Grande Canyon to accommodate traffic circulation, and a culverted road extension would be installed for the Caltrans SR-126 road widening project. As stated above, a portion of San Martinez Grande Canyon would be redesigned to reduce temporary impacts by 0.5 acre when compared to the Draft LEDPA.

Table 2 summarizes the modifications to the San Martinez Grande drainage that are proposed under the LEDPA. Please refer to **Figure 5** for locations of the San Martinez Grande Canyon proposed RMDP tributary drainage features, including affected drainages/jurisdictional areas, and the development areas along San Martinez Grande Canyon.

[1] In addition, as part of the Caltrans SR-126 road widening project, the existing six-lane bridge would be expanded to eight lanes, allowing SR-126 to cross the Castaic Creek drainage.



SOURCE: PACE - 2010

FIGURE 3

NEWHALL RANCH RMDP
MODIFIED, CONVERTED, AND PRESERVED TRIBUTARY DRAINAGES

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Table 2 Project Tributary Drainage RMDP Infrastructure

Drainage Location	Drainage Modified and Restored (lf)	Drainage Converted to Buried Storm Drain (lf)	Bank Stabilization[1] (lf)		Avoided Drainage (lf)	Road Crossings	
			West Bank	East Bank		Bridges	Culverts
Modified Drainages							
Chiquito Canyon	4,080	2,571	7,298	5,959	5,408	1	2
Lion Canyon	5,835	6,095	-	-	0	-	1
Long Canyon	8,742	961	6,005	8,030	876	-	4
Potrero Canyon	13,743	0	13,342	17,755	25,950	1	4
San Martinez Grande Canyon	0	0	3,423	3,884	5,170	1	1
Unmodified/Converted Drainages							
Agricultural Ditch	-	1,479	-	-	329	-	-
Ayers Canyon[2]	102	-	-	-	2,363	0	1
Dead-End Canyon	-	1,931	-	-	-	-	-
Exxon Canyon	-	1,754	-	-	1,788	-	-
Homestead Canyon	-	609	-	-	-	-	-
Humble Canyon	-	421	-	-	5,116	-	-
Middle Canyon	-	7,443	-	-	143	-	-
Mid-Martinez Canyon	-	4,346	-	-	467	-	-
Off-Haul Canyon	-	5,764	-	-	3,014	-	-
Salt Canyon	7,290	-	-	1,841	101,470	-	-
Magic Mountain Canyon	-	6,111	-	-	-	-	-
Unnamed Canyon 1[3]	-	4,647	-	-	-	-	-
Unnamed Canyon 2	-	416	-	-	-	-	-
Unnamed Canyon A	-	-	-	-	1,293	-	-
Unnamed Canyon B	-	1,004	-	-	568	-	-
Unnamed Canyon C	-	402	-	-	869	-	-
Unnamed Canyon D	-	1,241	-	-	250	-	-
Totals	**39,792**	**47,195**	**30,068**	**37,469**	**155,074**	**3**	**13**

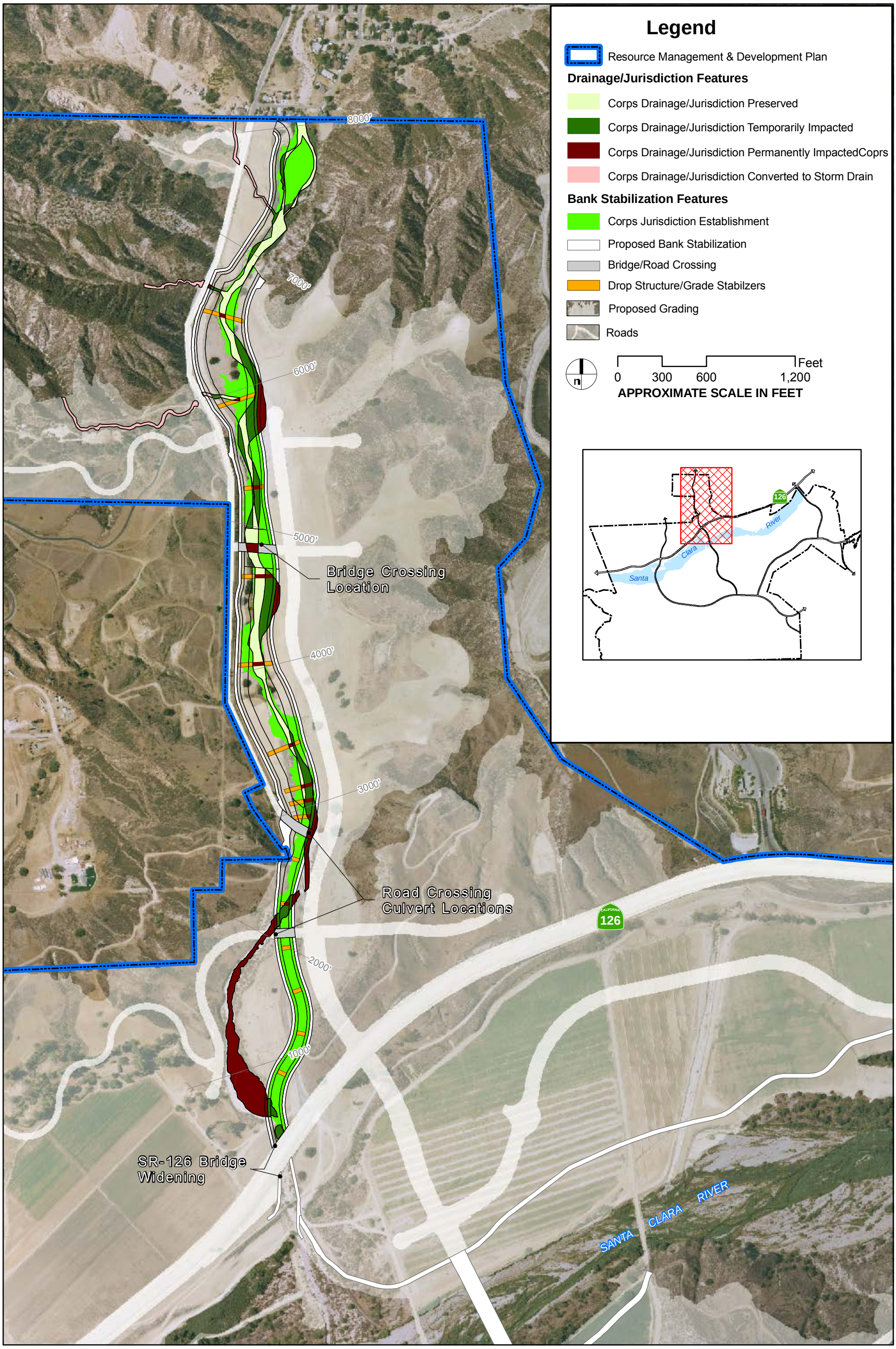
Notes:

[1] The lf of bank stabilization does not necessarily reflect impacts to jurisdictional areas; it only provides the linear feet of bank protection to be installed along various tributary drainages, outside of Corps jurisdiction.

[2] The 102 lf of Drainage Modified is road crossing bridge/culvert-related.

[3] Unnamed Canyons 1 and 2 are located within the Entrada planning area and are given a numerical designation to distinguish them from the four other unnamed canyons located within the Specific Plan area (i.e., Unnamed Canyons A-D).

Source: Newhall, 2010.



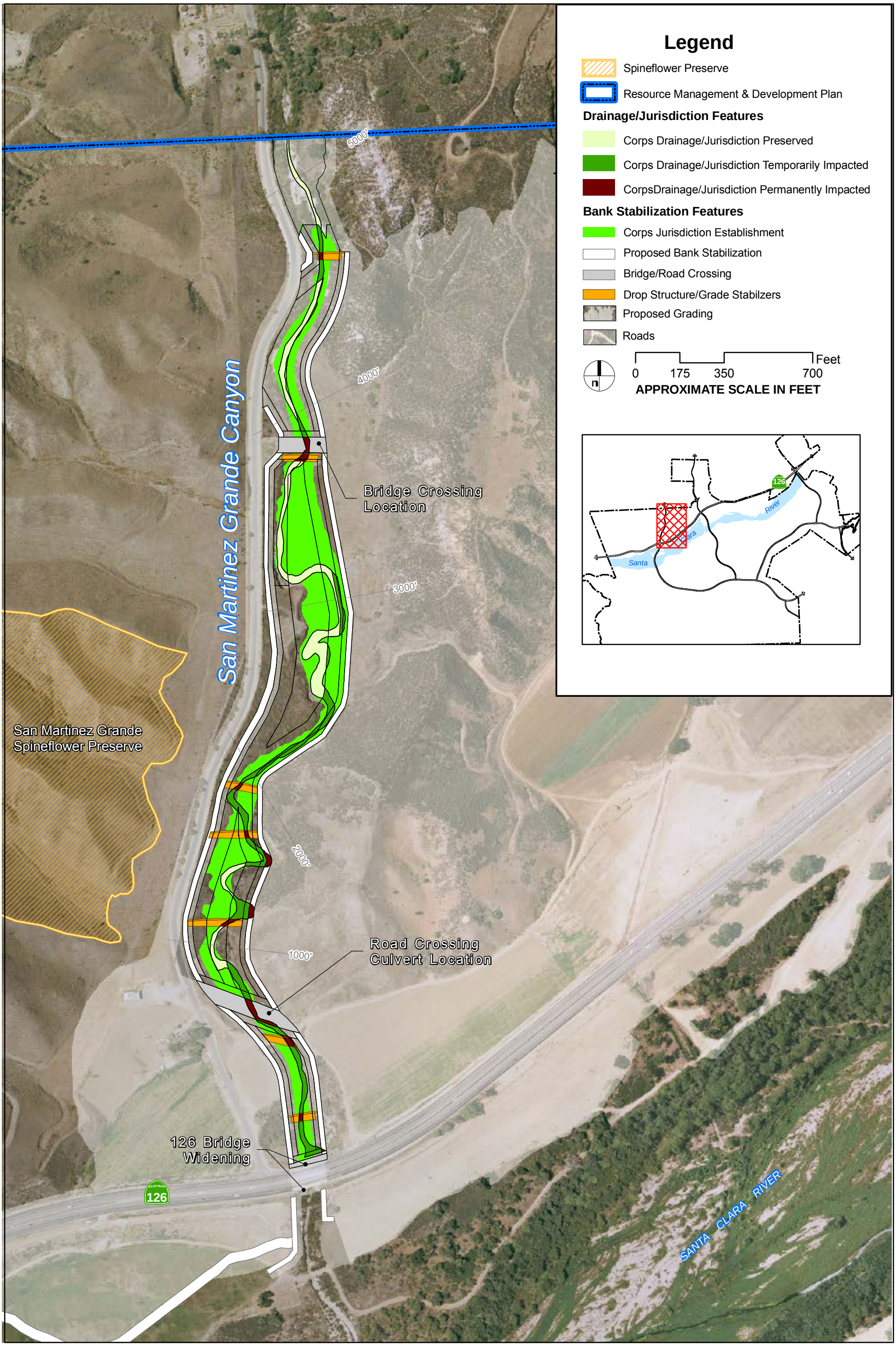
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 4

CHIQUITO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-4_ChiquitoFinalLedpa_PC1_20110525.mxd



SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 5

SAN MARTINEZ GRANDE CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-5_SanMartinezFinalLedpa_PC1_20110525.mxd

Potrero Canyon. Within Potrero Canyon, the LEDPA will preserve the existing planform and longitudinal profile of Potrero Canyon creek and provide a buffer of undeveloped land adjacent to it, with additional open space around the undeveloped land buffer. In Potrero Canyon, the LEDPA would result in bank stabilization along both sides of the preserved Potrero Canyon drainage, outside of Corps jurisdiction, as shown on **Figure 6**. Bank stabilization would be constructed in upland areas, allowing additional areas for creation of jurisdictional riparian habitat and native upland transition habitat. In the lowermost reach, the existing incised channel will be broadened and stabilized, including additional floodplain enhancement along the western bank. Approximately 19.3 acres of CAM wetlands will be constructed immediately adjacent to the existing CAM in the lower Canyon. A maximum of 60 grade stabilization structures will be constructed at appropriate intervals to remedy existing channel instability conditions, as well as to provide a stable channel under post-development conditions. Four road crossings will be constructed in Potrero Canyon, consisting of culverts across two branches in the easternmost portion of the valley,[2] another soft-bottomed culvert further downstream across the mainstem, and a bridge across the furthest downstream portion of the CAM in the middle portion of Potrero Canyon (see **Figure 6**). Approximately 13,342 lf of buried bank stabilization would be installed along the west bank, and 17,755 lf of buried bank stabilization would be installed along the east bank of Potrero Creek. None of the Potrero Canyon drainage would be converted to buried storm drain. The LEDPA would achieve total avoidance of waters and wetlands in Potrero Canyon, with the exception of necessary grade control structures.

Table 2 summarizes the modifications to the Potrero Canyon drainage that are proposed under the LEDPA. Refer to **Figure 6** for locations of newly created drainage, preserved drainage area, permanent drainage impact areas, side drainage bank stabilization areas, and bridge/road crossing culvert locations relative to jurisdictional areas. **Figure 6** also shows the relationship of the proposed Potrero Canyon drainage modifications to the proposed Potrero spineflower preserve to the west.

Potrero Creek Stream Stabilization Criteria. Under the LEDPA, stream stabilization measures used in Potrero Creek will conform to the following design criteria.[3] In each Construction Notification for a project phase affecting Potrero Creek, Newhall will provide detailed construction plans that demonstrate compliance with the criteria.

1. **Number**: Not more than 60 Step-Pool Grade Control Structures (GCS) shall be located along the Potrero Creek drainage within the RMDP project area.

2. **Height**: The average height of the GCS (the elevation of the drop stabilized by each structure) shall be 4 feet, with no structures greater than 5 feet high and a target height of 3 feet.

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[2] The easternmost road crossing in Potrero Canyon includes two culverts, because it crosses two forks of the Potrero drainage. Thus, a total of four culverts will be constructed in Potrero Canyon, as indicated in Table 2.

[3] The criteria are derived from "Creek Stabilization Approach for Potrero Canyon," ESA PWA (February 28, 2011).

3. **Location**: The GCS shall be located to minimize impacts to or avoid localized aquatic vegetation or habitats, stabilize existing headcuts, and be sited in conjunction with proposed creek road crossings (see below). The spacing of the GCS shall be determined by the difference between the existing and predicted equilibrium slope in each of the four creek reaches (i.e. the steeper the equilibrium slope, the closer the GCS spacing).

4. **Design**: The preferred step-pool design shall use ungrouted boulders and be similar to that shown in **Figure 7**. While boulder step pools are the preferred method of stabilization, there may be limited locations where specific site conditions (minimizing impact to sensitive habitat, exceptionally high velocity flows, etc) would result in an alternative design being preferred. The applicant shall prepare a hydrologic justification for review and approval by the Corps that justifies an alternative design that could include vertical sheet piles, soil cement, or grouted boulder drop, but still subject to the criteria set forth above in 1-3.

Potrero Creek Road Crossings. Potrero Creek road crossings will be constructed using soft-bottom, clear span arch culverts. The culverts will be designed to be underlain by natural stream material (sand) placed at the equilibrium slope. Grade control structures will be located at the up- and downstream end of the structures. The arches will be designed to allow wildlife passage along the creek corridor.

Long Canyon. In Long Canyon, the LEDPA would reconstruct a wide, stabilized channel along the same general alignment as the existing drainage. The reconstructed Long Canyon channel would be graded on top of 10 to 30 feet of fill material within Long Canyon. The reconstructed channel includes numerous grade stabilization structures to ensure vertical stability and a wider channel and valley bottom to accommodate controlled, lateral migration within a revegetated corridor; only 5.24 acres would be used for project mitigation. The excess would be available for permittee responsible mitigation for projects other than Newhall Ranch or for mitigation banking under 33 CFR Part 332.

Under the LEDPA, approximately 8,742 lf of Long Canyon would consist of reconstructed channel, while 876 lf would be preserved and 961 lf would be converted to buried storm drain. There would be 6,005 lf of buried bank stabilization along the west bank and 8,030 lf along the east bank of Long Canyon, outside of Corps jurisdiction. The Project includes four road crossing culverts in Long Canyon, including a large fill-supported crossing for Magic Mountain Parkway.

Table 2 summarizes the proposed changes. Please refer to **Figure 8** for locations of the proposed infrastructure features, affected drainages/jurisdictional areas, and development areas along Long Canyon.

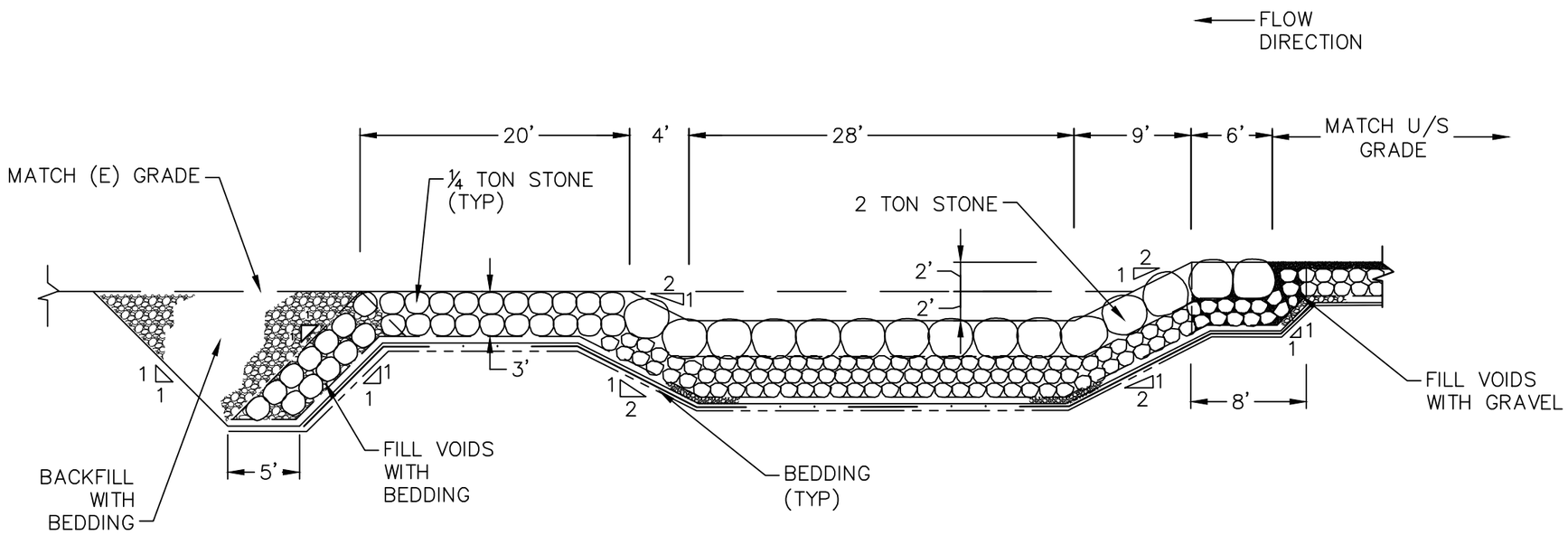
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 6

POTRERO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-6_PotreroFinalLedpa_PC1_20110330.mxd



NOTES:
1. NOT TO SCALE
2. DIMENSIONS SHOW ARE FOR REFERENCE ONLY. STRUCTURE SIZE TO BE DETERMINED DURING DESIGN PHASE

FIGURE 7
POTRERO GRADE CONTROL STRUCTURE

ESA PWA

Newhall Ranch - Potrero Canyon Conceptual Design

Typical Detail: Grade Stabilization Structure - Profile

SOURCE PACE 2 1

Note Location of drop structures/grade stabilizers are approximate.

FIGURE 8

LONG CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

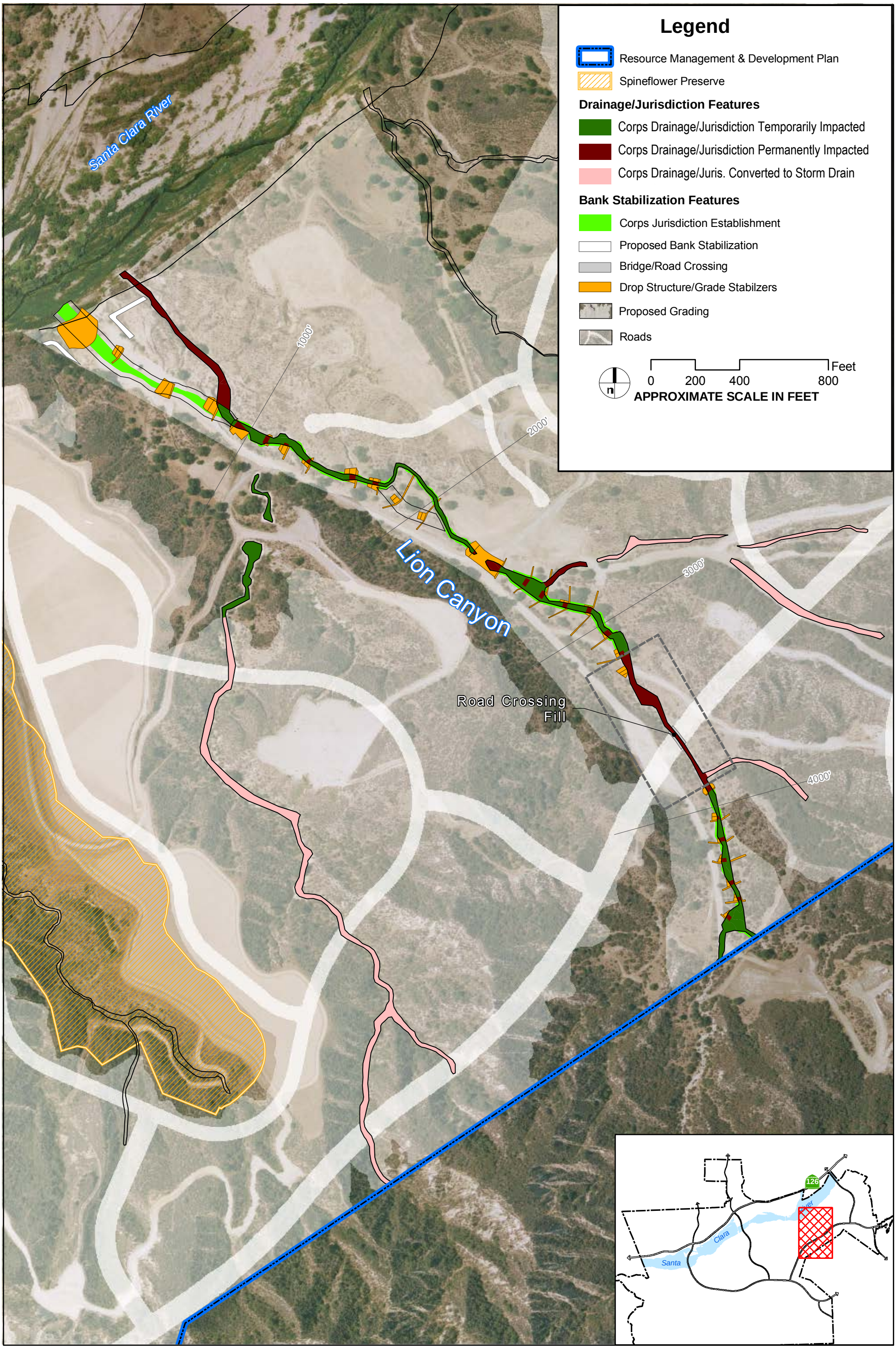
P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-8_LongFinalLedpa_PC1_20110525.mxd

Lion Canyon. Under the LEDPA, approximately 5,835 lf of the existing drainage in the main branch of Lion Canyon would be modified and restored in order to stabilize the drainage, through selective regrading in some areas and stabilization with grade control structures in others. In addition, approximately 6,095 lf of drainage would be converted to buried storm drain.

There would be one major road crossing culvert to support Magic Mountain Parkway in the uppermost reach. An existing agricultural road crossing in the lower reach would remain and would be converted for maintenance access to the water quality basin near the confluence with the Santa Clara River.

Table 2 summarizes the proposed modifications to the Lion Canyon drainage under the LEDPA. Please refer to **Figure 9** for locations of the proposed features, including affected drainages/jurisdictional areas, and the development areas along Lion Canyon.

Other Drainages. One culverted road crossing would be constructed across the mouth of the Ayers Canyon drainage. No other drainage facilities would be constructed in Ayers Canyon. In addition, the existing six-lane bridge would be expanded to eight lanes, allowing SR-126 to cross the Castaic Creek drainage. Portions of other drainages would be stabilized, restored, or converted to buried storm drain, as summarized in **Table 2**.



SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 9

LION CANYON DETAIL - NEWHALL RANCH RMDP
RMDP TRIBUTARY TREATMENTS

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-9_LionFinalLedpa_PC1_20110525.mxd

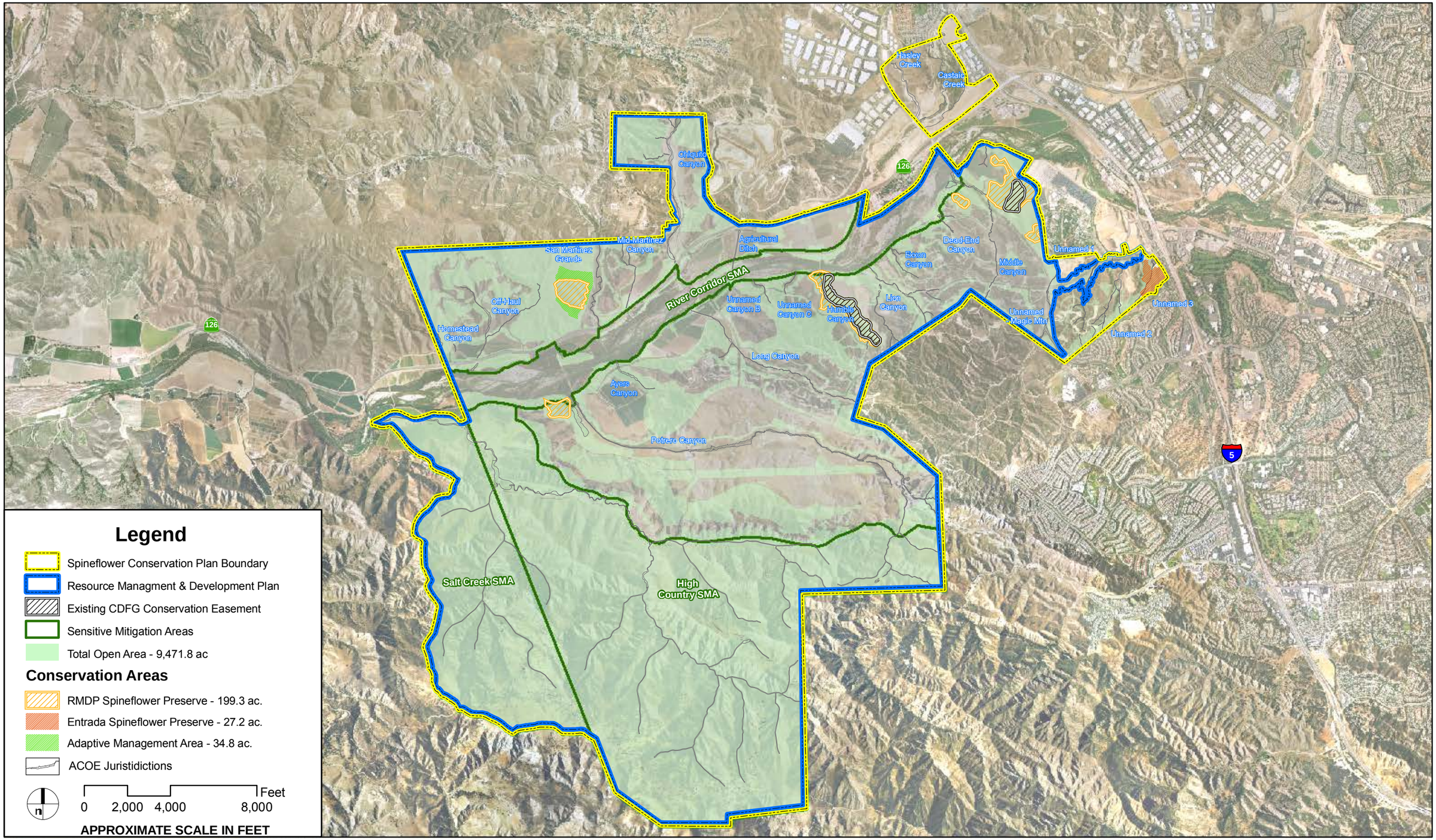
2.2 SCP Component Of The Project

The spineflower preserve design identified in the Revised Initial LEDPA has been further refined based on input received from CDFG, which is the CEQA lead agency on the EIS/EIR. As summarized on **Table 3**, two new spineflower preserve areas, referred to as the Magic Mountain and Spring preserves, have been added to the LEDPA. The locations of all proposed spineflower preserve areas are depicted on **Figure 10**. Within the preserves, spineflower management and monitoring actions would be as described in the Spineflower Conservation Plan (SCP).

Figure 10 also shows the connectivity among the project spineflower preserves and the approved and proposed open space within the SCP study area. **Table 3** summarizes the Project spineflower preserve characteristics, including acreage of spineflower to be preserved and taken.

Table 3
Spineflower Preserve Summary

Preserve Area	Preserve Size (ac)	Spineflower Preserved (ac)	Spineflower Impacted (ac)	Percent Preserved (ac)	Percent Taken (ac)
Airport Mesa	67.75	5.28	1.72	75.4%	24.6%
Grapevine Mesa	65.97	4.02	0.86	82.4%	17.6%
Potrero	16.91	1.32	0.33	80.0%	20.0%
San Martinez Grande	34.41	2.29	0	100.0%	0.0%
Magic Mountain	7.66	0.95	0	100.0%	0.0%
Spring	6.55	0.51	0	100.0%	0.0%
RMDP Total	**199.26**	**14.37**	**2.91**	**83.0%**	**17.0%**
Entrada/VCC (SCP Only)	27.19	1.03	1.94	34.7%	65.3%
SCP Total	**226.45**	**15.4**	**4.85**	**76%**	**24%**



SOURCE: PACE 2010

FIGURE 10

NEWHALL RANCH RMDP SPINEFLOWER PRESERVES

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-10_SpineflowerPreservesInRelationtoOpenSpace_PC1_20110330.mxd

Table 4 summarizes each of the proposed spineflower preserve areas and the preserve design elements, including the core or occupied spineflower population areas, the interior areas within the core that allow for expansion of the preserves, and the designated buffer, which represents the area within the preserve between the core perimeter and the outer preserve boundary or urban edge.

Table 4 Project Preserve Design

Preserve Statistics			Preserve Design Elements		
Preserve Area	**Proposed Preserve[1] (ac)**	**Cumulative Area Occupied[2] (ac)**	**Core[3]**	**Buffer[4]**	**Expansion[5]**
Airport Mesa	67.75	5.28	26.22	41.53	20.94
Grapevine Mesa	65.97	4.02	9.01	56.96	4.99
Potrero	16.91	1.32	4.37	12.54	3.05
San Martinez Grande	34.41	2.29	8.24	26.17	5.95
Magic Mountain	7.66	0.95	1.70	5.98	0.75
Spring	6.55	0.51	0.64	5.90	0.13
RMDP Total	**199.26**	**14.37**	**50.18**	**149.08**	**35.81**
Entrada/VCC (SCP Only)	27.19	1.03	**9.00**	**18.19**	**7.97**
SCP Total	**226.45**	**15.4**	**59.18**	**167.27**	**43.78**

Notes:

1 Proposed preserve is the total area within the preserve boundary.

2 Cumulative area occupied is the total area of mapped spineflower within the preserve between 2002 and 2007.

3 Core identifies the occupied/preserved populations interior to buffer area and preserve boundary.

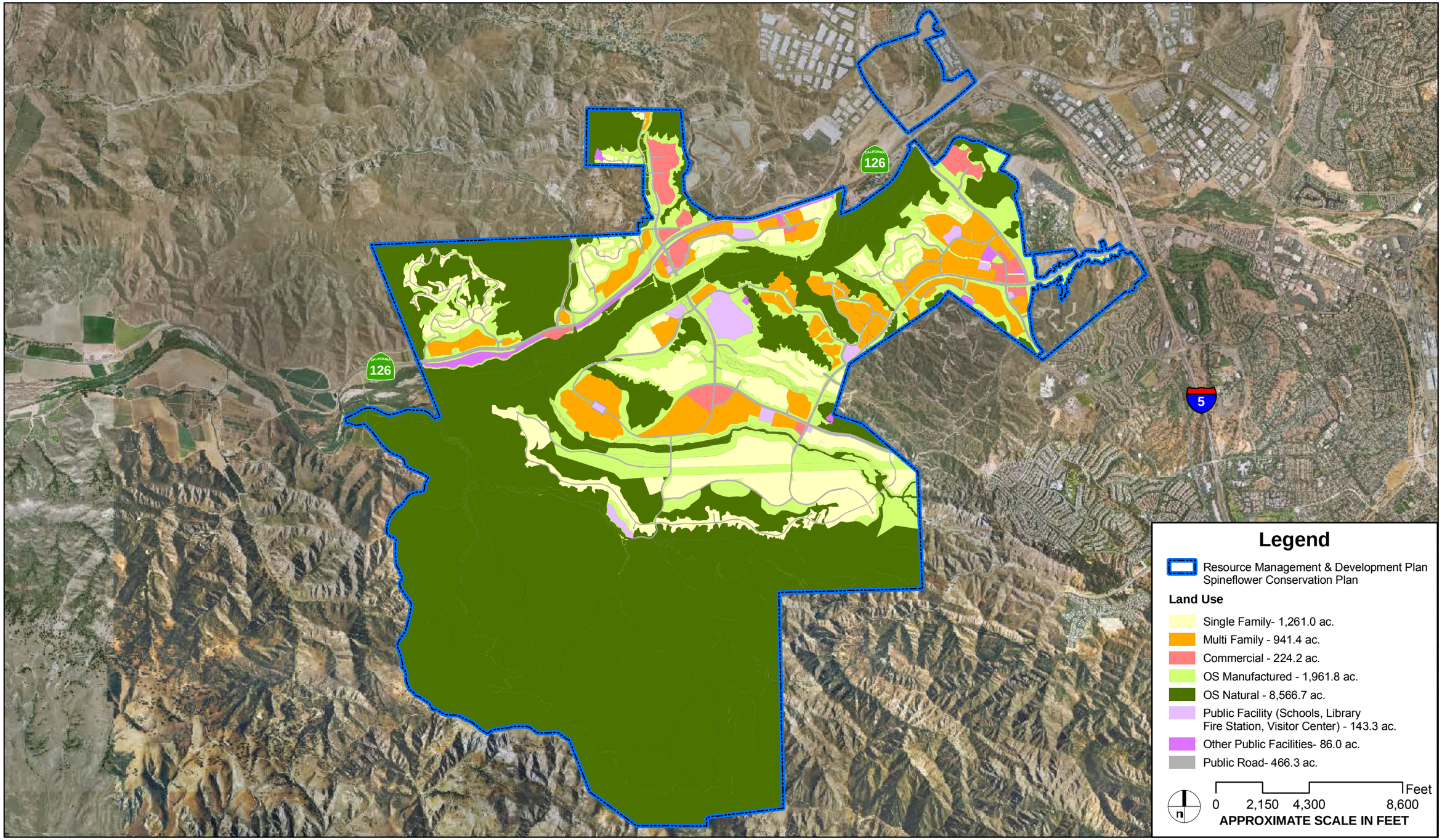
4 Buffer represents the area within the preserve between the core perimeter and the preserve boundary (urban edge.)

5 Expansion area represents the area interior to the core that is not part of the cumulative area occupied.

CDFG is responsible for granting incidental take authorization under the California Endangered Species Act for impacts to spineflower. On December 3, 2010, CDFG certified the EIR portion of the Final EIS/EIR and approved the RMDP/SCP project, associated Master Streambed Alteration Agreement and two Incidental Take Permits, including an Incidental Take Permit for spineflower. The Project is consistent with the CDFG Master Streambed Alteration Agreement and the Incidental Take Permits.

2.3 Summary Description of Development Facilitated by the Project

Figure 11 depicts the land uses that would be facilitated within the RMDP area under the Project. The Project would provide 2,570 net developable acres, approximately 19,517 residential units, and 5.45 million square feet of commercial uses. **Table 5** compares the development facilitated under the LEDPA to the development under the proposed project.



SOURCE: HUNSAKER, PACE 2010

FIGURE 11

NEWHALL RANCH RMDP
LAND USE PLAN

P:\8238E\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-11_FinalLedpaaRmdpScpLandUsePlanPC1_20110525.mxd

Table 5
Development Facilitated by the Project

Land Use Category[1]	Acres	Res. (DU)[2]	Comm.[3] (MSF)[4]	Percent Res. Reduction (DU)[5]	Percent Comm. Reduction (MSF)[5]	Total Res. Reduction (DU)[5]	Total Comm. Reduction (MSF)[5]
Single-Family Residential	1,261.0	8,316	-	-8.4%	-	-765	-
Multi-Family Residential	941.4	11,201	-	-5.1%	-	-603	-
Commercial	224.2	-	5.45	-	-1.8%	-	-0.1
Public Facilities[6]	143.3	-	-	-	-	-	-
Subtotal – Net Developable Acreage	2,569.9						
Other Public Facilities	552.4	-	-	-	-	-	-
Open Space[7]	10,528.5	-	-	-	-	-	-
Subtotal RMDP Area	**13,650.8**	**19,517**	**5.45**	**-6.6%**	**-1.8%**	**-1,368**	**-0.1**

Notes:

1 In some instances, land use categories have been consolidated to simplify presentation of the land use data.

2 "DU" means development units

3 Commercial includes business park, office, retail, *etc*.

4 "MSF" means million square feet.

5 All reductions represent a comparison to the amount of development approved under the Specific Plan and included in the Proposed Project.

6 Public Facilities includes parks, schools, libraries, *etc*.

7 Open Space means natural (preserved) and manufactured open space, and includes the Specific Plan's High Country SMA/SEA 20, River Corridor SMA/SEA 23, Open Areas, spineflower preservations areas, the Salt Creek area adjacent to the Specific Plan boundary, and other specified open areas, primarily located within the Specific Plan's Estate Residential designation.

Source: The Newhall Land and Farming Company, 2010.

3.0 PERMANENT AND TEMPORARY FILL OF WATERS OF THE UNITED STATES

Of the 660.1 acres of waters of the United States on the Project site, the LEDPA would avoid permanent or temporary impacts to approximately 87 percent (576.9 acres) of the jurisdictional waters on site, compared to 80 percent avoidance under the proposed Project. In total, the LEDPA would permanently fill approximately 47.9 acres of waters of the United States (48.6 percent reduction in impact acreage compared to the proposed Project), and would temporarily disturb 35.3 acres (6 percent increase in temporary impact acreage compared to the proposed Project). The temporary impacts would be associated with construction zones adjacent to proposed Project facilities, which would be restored and revegetated following completion of construction. In some instances, temporary impacts also would result from restoration activities

(*e.g.*, when such activities require earthwork to be conducted in jurisdictional areas to correct existing incised channel banks). **Table 6** provides a summary of the permanent and temporary fill impacts that would result from the currently proposed LEDPA.

***Avoidance*.** As stated above, of the total 660.1 acres of waters of the United States that occur on the RMDP site, the LEDPA would avoid permanent or temporary impacts to 576.9 acres of waters of the United States, or approximately 87 percent of the jurisdictional waters on site. Key avoided areas under the LEDPA would include the majority of the Santa Clara River main stem, the Middle Canyon spring complex (a high-quality wetland), and the Salt Creek sub-watershed. In addition, the entire Potrero Canyon drainage, including the CAM areas, would be avoided except for necessary channel bed stabilization features. The lower CAM within Potrero Canyon is also proposed to be linked with a 19.3-acre wetland mitigation site immediately upstream from the mesic meadow, creating one, nearly contiguous CAM wetland area in lower Potrero Canyon.

***Fill in the Santa Clara River*.** Of the 471.2 acres of waters of the United States within the Santa Clara River main stem on site, the LEDPA would result in 5.8 acres of permanent impact and 15.7 acres of temporary impact to waters of the United States in the main stem of the river. The permanent impact would be associated with the construction of two bridges across the river (one of which is already permitted), the Utility Corridor, and future improvements to SR-126. Permanent impacts would represent approximately one percent of the total jurisdictional acreage in the river within the Project area.

***Fill in On-Site Tributary Drainages*.** Of the total 188.9 acres of waters of the United States within tributary drainages on site, the LEDPA would result in approximately 42.1 acres of permanent impact and 19.6 acres of temporary impact to waters of the United States. This impact results from converting drainages to buried storm drains, eliminating existing drainages for realignment, and grading to accommodate site development. The permanent impact would represent 22.4 percent of the total jurisdictional acreage in the on-site tributaries. The Project would generally affect all classes of tributary drainages on site (small and large tributary drainages), and no type of aquatic resource would be disproportionately affected.

***Fill in Special Aquatic Sites*.** Of the 276.9 acres of wetland waters of the United States on site, the LEDPA would permanently disturb 5.1 acres of wetlands (a 75 percent reduction compared to the proposed Project) and temporarily disturb 11.8 acres (a five percent increase compared to the proposed Project's 11.2 acres of temporary wetland impacts). These impacts would occur primarily due to bridge construction and the Utility Corridor along the Santa Clara River main stem. Elimination of the planned bridge across the river at Potrero Canyon Road would reduce impacts to wetlands along the river and in lower Potrero Canyon. In addition, the Salt Creek watershed and the Middle Canyon spring complex would be preserved and no permanent impacts to wetlands in those areas would occur. Additionally, the CAM wetlands in lower Potrero Canyon would be avoided, and the CAM wetland in middle Potrero Canyon would be

avoided except for impacts associated with necessary channel bed stabilization features. In total, the LEDPA would avoid permanent or temporary impacts to 94 percent of all wetlands on site, compared to 89 percent for the proposed Project. **Table 7** provides a summary of the LEDPA's permanent and temporary impacts to federally protected wetlands.

Impact to the Riparian Condition. The LEDPA would affect the riparian condition of the aquatic resources on site as shown in **Table 8**. Changes in riparian condition would stem from two sources: (a) changes in the acreage of jurisdictional areas on site; and (b) changes in the overall quality (measured by the HARC Total Score) of on-site riparian areas. As discussed above and shown in **Table 9**, the LEDPA would result in a net gain of jurisdictional area on site. After taking into account the changes in HARC total scores that would occur as a result of Project impacts and mitigation, the LEDPA also would result in a Project-wide increase of 33.24 HARC AW-score units. This gain would occur both within the Santa Clara River main stem, through conversion of disturbed and agricultural lands to river jurisdiction, and within the stabilized, modified and reconstructed tributary drainages, where the change is primarily attributable to the increased size of many assessment reaches post-Project.

Table 6

Fill of Corps Jurisdictional Waters (Including Wetlands) Resulting From LEDPA (Acres)

Project Component	Impact Type	Santa Clara River	Chiquito Canyon	San Martinez Grande Canyon	Long Canyon	Potrero Canyon	Lion Canyon	Salt Creek	Other Drainages	All Tributaries Subtotal	Total
Bridges and Road Crossings	Permanent	3.34	0.17	0.08	0.13	0.42	0.03	0.00	0.00	0.84	**4.17**
	Temporary	5.48	0.00	0.09	0.00	0.12	0.00	0.00	0.00	0.21	**5.69**
Bank Stabilization	Permanent	1.94	0.89	0.05	0.00	0.04	0.64	0.00	0.00	1.63	**3.57**
	Temporary	8.17	3.05	0.95	0.01	3.57	1.92	0.00	0.06	9.56	**17.73**
Converted Drainage to Buried Storm Drain	Permanent	0.09	0.84	0.00	0.67	0.00	3.34	0.00	23.55	28.39	**28.48**
Drainage to be Regraded	Permanent	0	0	0	2.88	0	0	0	0	2.88	**2.88**
Drainage Displaced by Development and Manufactured Open Space	Permanent	0.16	2.16	0.00	0.87	0.00	0.40	0.01	1.44	4.88	**5.04**
Existing Drainage to be Restored	Temporary	0.11	0.00	0.00	0.00	0.00	0.00	7.24	0.00	7.24	**7.35**
Other Facilities[1]	Permanent	0.26	0.64	0.09	0.68	1.59	0.28	0.22	0.00	3.51	**3.77**
	Temporary	1.94	0.31	0.02	0.00	1.98	0.24	0.03	0.00	2.58	**4.53**
Total Acreage Filled	**Permanent**	**5.79**	**4.70**	**0.22**	**5.24**	**2.06**	**4.69**	**0.23**	**24.99**	**42.13**	**47.92**
	Temporary	**15.70**	**3.36**	**1.06**	**0.01**	**5.67**	**2.17**	**7.28**	**0.06**	**19.60**	**35.30**

[1] This category includes grade control structures, trail crossings, debris and detention basins, wildlife viewing platforms, and the WRP outfall. See **Subsection 2.6** of the Final EIS/EIR for a description of these facilities.

Table 7

Fill of Federally Protected Wetlands Resulting from Implementation of LEDPA (Acres)

Project Component	Impact Type	Santa Clara River Fringe Wetlands	Salt Creek Canyon Wetlands	Potrero Canyon Riverine and Seep Wetlands (PO-4 and PO-7)	Spring Complex Near Middle Canyon (MI-6)	Total
Bridges	Permanent	2.49	0.00	0.08	0.00	**2.57**
	Temporary	2.67	0.00	0.07	0.00	**2.74**
Bank Stabilization	Permanent	1.79	0.00	0.00	0.00	**1.79**
	Temporary	5.30	0.00	0.99	0.00	**6.28**
Drainage Graded	Permanent	0.09	0.00	0.00	0.00	**0.10**
	Temporary	0.00	0.00	0.00	0.00	**0.00**
Other Facilities[1]	Permanent	0.22	0.00	0.42	0.00	**0.65**
	Temporary	0.99	0.00	0.56	0.00	**1.56**
Restoration	Permanent	0.00	0.00	0.00	0.00	**0.00**
	Temporary	0.07	1.14	0.00	0.00	**1.21**
Total Impacts	**Permanent**	**4.59**	**0.00**	**0.49**	**0.00**	**5.10**
	Temporary	**9.04**	**1.14**	**1.61**	**0.00**	**11.79**
Percent Reduction in Permanent Impacts to Wetlands, Compared to Proposed RMDP		**-33.5%**	**0%**	**-92.9%**	**0%**	**-75%**

TABLE 8
FINAL LEDPA CORPS JURISDICTIONAL IMPACTS
AND AVERAGE HARC SCORES AND AW-SCORE UNITS

Type of Impact	Corps River Impacts	Corps Tributary Impacts	Corps Total Impacts	
	(Acres of Waters of the United States)			
Permanent Impacts	5.79	42.13	47.92	
Temporary Impacts	15.70	19.60	35.30	
Totals	**21.49**	**61.73**	**83.22**	
Type of Impact	**HARC - River Impacts**	**HARC - Tributary Impacts**	**HARC Impacts Total**	**Calculated Average HARC Score**
	(HARC AW Score Units)			
Permanent Impacts	4.41	26.10	30.51	0.64
Temporary Impacts	12.11	15.56	27.68	0.78
Totals	**16.53**	**41.67**	**58.19**	**0.70**

4.0 MITIGATION

The LEDPA would incorporate extensive mitigation both on-site and off-site, as detailed in the Mitigation Plan (Dudek, 2011) (**Attachment 1**). In total, the Project would provide 114.04 acres of compensatory mitigation (creation and enhancement of jurisdictional areas), with a 2.4 to 1 mitigation ratio for permanent impacts to waters of the United States sitewide and a 6.9 to 1 mitigation ratio for permanent impacts to wetland waters of the United States sitewide. The proposed mitigation will also ensure that the Project results in a net increase in functions and services of waters of the United States within the Project area and that those functions are maintained in perpetuity. Mitigation capacity in excess of these requirements will be available as mitigation for other Permittee-responsible activities in accordance with Corps regulations or for mitigation banking under 33 CFR Part 332.

In addition to compensatory mitigation, the LEDPA would preserve and protect in perpetuity approximately 612.2 acres of waters that are not permanently impacted, including 271.8 acres of wetlands, These areas will be protected by a conservation easement or deed restriction and will be managed under an endowed long-term management plan. The ratio of preserved acres to permanently impacted waters is approximately 14.6 to 1, and 53 to 1 for impacted wetlands specifically. The schedule for recordation of the conservation instruments and dedication of the mitigation areas is summarized in **Table 10**. **Figure 12** shows the proposed fee owners and easement holders for the conservation areas and the restrictive covenant for flood protection on an additional 119 acres of floodplain area in the Santa Clara River immediately downstream of the RMDP area. **Figure 13** shows the dedication of conservation areas within the Santa Clara River Corridor associated with the phases of project construction.

The Mitigation Plan has been modified in the manner specified by the Corps. Under the revised Mitigation Plan, Newhall would implement the 19.3-acre wetland mitigation area in lower Potrero Canyon, the 15.9 acres of wetlands mitigation in the Santa Clara River at Mayo Crossing, and 19.7 acres of habitat enhancement in portions of the upper Salt Creek watershed prior to any permanent impacts to waters of the United States. Thus, the initial phase of the Mitigation Plan would include the implementation of 35.2 acres of wetlands creation and 19.7 acres of enhancement, for a total of 54.9 acres of mitigation implemented prior to any permanent impacts to waters of the United States. In addition. prior to any impacts to waters of the United States, a restrictive covenant for floodplain protection will be placed on the Additional Floodplain Conservation Area.

Additional mitigation would be implemented during construction of Project phases, including 2.7 acres along the Santa Clara River at Long Canyon Bridge, 18.5 acres in lower-middle Salt Canyon, 2.1 acres in Lion Canyon, 5.24 acres in Long Canyon, 9.8 acres in Chiquito Canyon, 6.8 acres in San Martinez Grande Canyon, and 14 acres in Potrero Canyon, as summarized in **Table 9**, below. The Mitigation Plan specifies that each of these mitigation areas will be implemented concurrently with a specific phase of Project construction (i.e., implementation will occur prior to or within two years of impacts associated with that phase). The Mitigation Plan provides additional information on the location and configuration of each of the proposed mitigation areas. In particular, the Mitigation Plan includes detailed information regarding the existing conditions, mitigation objectives and concepts, mitigation implementation components, and rationale for success for the lower Potrero Canyon, Salt

Creek and Mayo Crossing mitigation sites. (See Mitigation Plan §§ 2.2.2-2.2.4.) Mitigation excess of these requirements will be available for permittee responsible mitigation or for mitigation banking under 33 CFR Part 332

The Mitigation Plan also fully describes the following for each of the proposed mitigation areas:

- Goals of the Mitigation Plan
- Descriptions of the mitigation sites
- An implementation plan for mitigation sites
- Maintenance activities during the mitigation monitoring period
- A monitoring plan for the mitigation sites
- Criteria for successful completion of mitigation implementation
- Long-term management plan
- Contingency measures

Table 9
Mitigation for Permanent Impacts to Corps Jurisdictional Areas
HARC-AW-Total Score Units

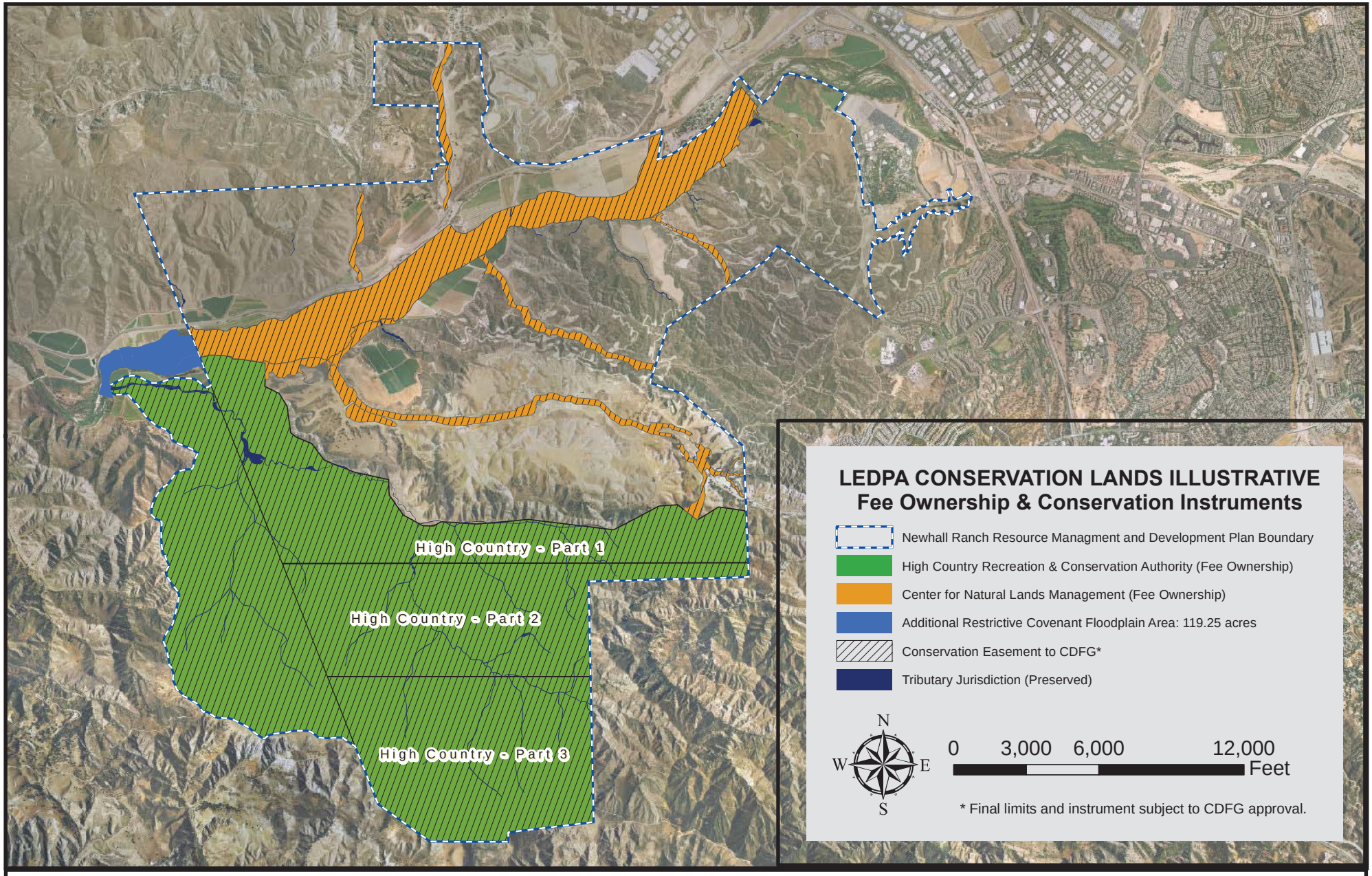
Mitigation Site	Jurisdiction Creation/ Enhancement Mitigation (Acres)	Post-project HARC Score Estimate	Total HARC AW Score Units Provided
Mayo Crossing (Santa Clara River)	15.9	0.8	12.7
Potrero Canyon CAM	19.3	0.8	15.2
Upper Salt Creek	19.7	0.1	2.0
Santa Clara River (@ Long Cyn Bridge)	2.7	0.8	2.2
Lower & Middle Salt Creek	18.5	0.8	7.5
Lion Canyon	2.1	0.6	1.3
Long Canyon	5.24	0.6	3.14
Chiquito Canyon	9.8	0.6	5.9
San Martinez Grande Canyon	6.8	0.6	4.1
Potrero Canyon	14	0.8	9.8

TOTAL Mitigation	**114.04**	**0.6**	**63.74**
Project Impacts (permanent)	**-47.9**	**0.64**	**-30.5**
Calculated Mitigation Ratio	**2.4 : 1**		**2.1 : 1**

Table 10: LEDPA Conservation Land Dedication/Recordation Schedule (See Note at End of Table)			
Open Space Area	**Conservation Instrument**	**Fee Ownership**	**Schedule/Phase of Development**
High Country SMA			
High Country (Part 1)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 2,000th Residential Building Permit
High Country (Part 2)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 6,000th Residential Building Permit
High Country (Part 3)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 11,000th Residential Building Permit
Salt Creek – Ventura County			
Salt Creek Watershed w/in Ventura County	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	Upon Approval of Potrero Canyon TTM
Santa Clara River			
Santa Clara River (LMV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Castaic Creek Confluence Area
Santa Clara River (LMV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Long Canyon Bridge Area
Santa Clara River (LMV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Castaic Creek at SR126 Area
Santa Clara River (MV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - SJ Flats to Lion Canyon
Santa Clara River (MV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - Middle Canyon Spring Area
Santa Clara River (MV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - Commerce Center Bridge Area
Santa Clara River (UC Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction between Chiquito and San Martinez Grande drainages

Santa Clara River (UC Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction west of San Martinez Grande
Santa Clara River (WRP)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Newhall Ranch Wastewater Reclamation Plant (WRP) construction
Santa Clara River (HS)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Homestead Village South TTM Development
Santa Clara River (Pot)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development
Tributary Drainages			
Mission Village Preserved & Lion Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development
Homestead Village South Preserved and Long Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead South Village TTM Development
Homestead Village North Preserved, Chiquito, San Martinez Grande Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead North Village TTM Development
Potrero Canyon Drainage and CAM Mitigation Site	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development

Note: In addition, Newhall may not begin work in waters of the United States for any Pre-Construction Notification area, including the advance mitigation areas (the 19.3-acre wetland mitigation area in lower Potrero Canyon, the 15.9 acres of wetlands mitigation in the Santa Clara River at Mayo Crossing, and the 19.7 acres of habitat enhancement in portions of the upper Salt Creek watershed), until it has made an irrevocable offer of dedication to the Corps of a Deed Restriction or Conservation Easement within the Pre-Construction Notification area in a manner consistent with Master Streambed Alteration Agreement No. 1600-2004-0016-R5 and that permittee may not sell, transfer assign or otherwise divest itself of fee title for any real property within a future Conservation Area with first recording a deed restriction or conservation easement over the area.



Path: I:\Backup Files\21\1V0\FG\SData\MXDs-AllProjects\LEDPA_CorpsMap_DeedRestriction-CEs_v2.mxd

FIGURE 12
CONSERVATION LANDS

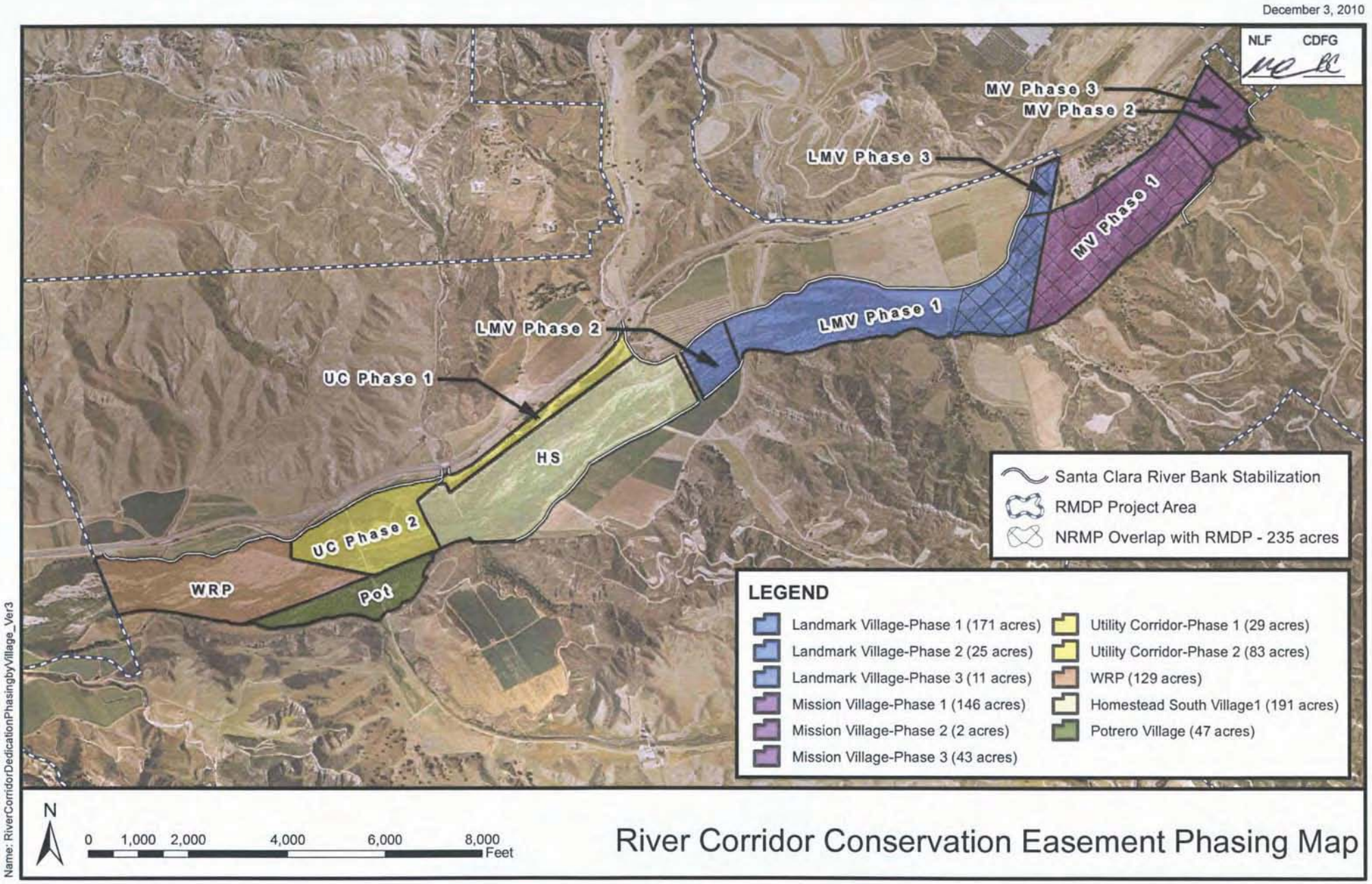

December 3, 2010
NLF
CDFG
MV Phase 3
MV Phase 2
LMV Phase 3
MV Phase 1
LMV Phase 1
LMV Phase 2
UC Phase 1
HS
UC Phase 2
WRP
Pot
Santa Clara River Bank Stabilization
RMDP Project Area
NRMP Overlap with RMDP - 235 acres
LEGEND
Landmark Village-Phase 1 (171 acres)
Landmark Village-Phase 2 (25 acres)
Landmark Village-Phase 3 (11 acres)
Mission Village-Phase 1 (146 acres)
Mission Village-Phase 2 (2 acres)
Mission Village-Phase 3 (43 acres)
Utility Corridor-Phase 1 (29 acres)
Utility Corridor-Phase 2 (83 acres)
WRP (129 acres)
Homestead South Village1 (191 acres)
Potrero Village (47 acres)
N
0 1,000 2,000 4,000 6,000 8,000
Feet
River Corridor Conservation Easement Phasing Map
Name: RiverCorridorDedicationPhasingbyVillage_Ver3

FIGURE 13

5.0 LID STANDARD

The LEDPA will incorporate advanced LID measures, consistent with a LID Performance Standard that was developed in consultation with the Corps, the U.S. Environmental Protection Agency and the Regional Water Quality Control Board.

Under the LID Performance Standard, LID project design features (PDFs) will be selected and sized to retain the volume of stormwater runoff produced from a 0.75 inch storm event to reduce the percentage of Effective Impervious Area (EIA) to 5 percent or less of the total project area within the Newhall Ranch Specific Plan. Runoff from all EIA will be treated with effective treatment control measures that are selected to address the pollutants of concern and are sized to capture and treat 80 percent of the average annual runoff volume. The Regional Board will evaluate compliance with the LID Performance Standard for each Village[4] within the RMDP as part of the WQTR review process. Each Village-level project must demonstrate that the LID Performance Standard is achieved cumulatively, considering the retention volume provided by the project itself and by all previous development phases within the RMDP area.

The Newhall Ranch Specific Plan LID Performance Standard (May 2011), Attachment 2, describes the LID Performance Standard in greater detail.

6.0 WATER RECLAMATION PLANT

The Project plans to treat effluent and obtain recycled water from the Newhall Ranch Water Reclamation Plant (WRP). The Regional Board issued an NPDES permit/WDRs (NPDES No. CA0064556, Order No. R4-2007-0046) for the Newhall Ranch WRP ("Newhall WRP Permit"). The Corps section 404 Permit application includes impacts both for the construction of the Newhall Ranch WRP and the utility corridor associated with the Newhall Ranch WRP.

The Newhall Ranch WRP Permit became effective October 27, 2007, and will expire on August 10, 2012. In accordance with state and federal regulations, a renewal request must be filed at least 180 days prior to the expiration date, or by February 12, 2012. "Treatment at the [Newhall Ranch WRP] … will consist of screening, activated sludge secondary treatment with membrane bioreactors, nitrification/denitrification, ultraviolet disinfection, and partial reverse osmosis.… Brine from the RO system will be disposed of through . . . deep well injection, under a separate USEPA permit." (Newhall Ranch WRP Permit, Attachment F, Section A, Pages F-4 – F-5.) The chloride effluent limit at the Newhall Ranch WRP discharge point is set at 100 mg/L (average monthly). (*Id.*, Table 6.)

[4] The Newhall WRP is treated the same as a "Village" for purposes of this review process.

As an interim, alternative engineering arrangement to the use of the Newhall Ranch WRP, Newhall and the Sanitation Districts Nos. 26 and 32 (later consolidated as the Santa Clarita Valley Sanitation District ["SCVSD"]) entered into an Interconnection Agreement, dated January 9, 2002 ("2002 Interconnection Agreement"). The 2002 Interconnection Agreement sets conditions under which the first 6,000 homes (up to an equivalent flow of 1.6 MGD) on Newhall Ranch may temporarily treat the effluent at the existing Valencia WRP. The Sanitation District approved the 2002 Interconnection Agreement in duly noticed public meetings and has been referenced in subsequent official documents, including Los Angeles County and LAFCO documents supporting formation of the Newhall Ranch Sanitation District ("NRSD"), which was formed to operate the Newhall Ranch WRP under the Newhall Ranch WRP NPDES Permit.

The County of Los Angeles ("County") adopted a resolution on January 18, 2011, confirming formation of the NRSD. In doing so, the County found that formation of the NRSD was within the scope of the previously certified Newhall Ranch EIR and Addendum and specifically referenced the alternative for interim treatment of the effluent from up to 6,000 units at the Valencia WRP during construction of the Newhall Ranch WRP.

Due to engineering and logistical considerations, and as specified in the 2002 Interconnection Agreement, Newhall's current plan is to defer construction of the Newhall Ranch WRP and instead treat effluent from the first 6,000 homes at the Valencia WRP and to obtain recycled water from the Valencia WRP. The Valencia WRP has a design capacity of 21.6 MGD. (Valencia WRP Permit, Attachment F, Section II, Page F-4.) The plant currently treats a much smaller volume of approximately 15 MGD and is not anticipated to approach its design capacity (even with the additional influent from other projects) for many years. The SCVSD also has stated it has more than sufficient capacity to treat the effluent from the 6,000 units on an interim basis as contemplated by the 2002 Interconnection Agreement.

The water that the Project can use as recycled water is water that would receive tertiary treatment from either the Valencia WRP or Newhall Ranch WRP. During the "dry" season (roughly May through September), the Project can essentially re-use 100 percent of the effluent sent for tertiary treatment resulting in no discharge of the Project's effluent to the Santa Clara River. During the "wet" season (roughly October through April), the demand for recycled water is reduced and the effluent would occasionally exceed the need for recycled water resulting in a discharge to the Santa Clara River. The Fact Sheet for the Newhall WRP Permit shows that, for a 2 MGD effluent flow, there would be an average discharge of 0.2 MGD to the Santa Clara River for the five month wet season. Under the existing Newhall Ranch WRP permit, those flows would be treated and discharged to the Santa Clara River at less than or equal 100 milligram/liter ("mg/l") in compliance with the Basin Plan. Under current conditions, the balance of flows from the existing Valencia WRP would be discharged at approximately 125 mg/L unless further chloride reduction treatment is provided.

Development of the Newhall Ranch WRP is expected to commence between occupancy of the first 3,000 and 4,000 units during interim operation under the 2002 Interconnection Agreement. Due to the delay in construction and operation of the Newhall Ranch WRP, Newhall Land has proposed interim equivalent chloride reduction treatment at the Valencia WRP. The proposal involves chloride treatment of the effluent amount originating from Newhall Ranch (up to 6,000 units) at the Valencia WRP during the 2002 Interconnection Agreement operation period, so that the Project effluent discharged to the Santa Clara River through the permitted Valencia WRP outfall would result in discharge equivalent to 100 mg/L chloride (or other applicable standard), which is the chloride effluent treatment standard under the Newhall Ranch WRP Permit. **Figure 14** conceptually illustrates the additional chloride reduction treatment process at the Valencia WRP that would occur in implementing the 2002 Interconnection Agreement. This equivalent chloride reduction treatment may require a revised NPDES permit for the Valencia WRP under the federal Clean Water Act (33 U.S.C. §§ 1251, *et seq*.). The revised NPDES permit would need to be approved by the Los Angeles Regional Water Quality Control Board ("LARWQCB"). The SCVSD would be the permittee for the revised NPDES permit for the Valencia WRP, and the funding for implementing treatment would be addressed through implementation of the 2002 Interconnection Agreement. Should the Valencia WRP permit revision be subject to unexpected delays attributed to actions by LARWQCB or the SCVSD, or if the LARWQCB formally determines that a revised NPDES permit is not required, then the Project will send effluent to the Valencia WRP per the terms and conditions of the 2002 Interconnection Agreement.

As part of the Project, Newhall has incorporated this interim chloride reduction treatment as a design feature that would be employed at the Valencia WRP under the 2002 Interconnection Agreement to achieve interim chloride reduction equivalent to that of the Newhall Ranch WRP under the Newhall Ranch WRP Permit (100 mg/L). As stated, **Figure 14** conceptually illustrates the additional treatment process incorporated to remove chloride from Newhall Ranch effluent at the Valencia WRP.

7.0 LID Standard and Oil and Gas Well in Future Conservation areas

Existing oil and gas well sites numbered RSF076, RSF090, RSF093, RSF119, RSF122, and RSF139 on Figure 15 attached hereto, located in or adjacent to future Corps mitigation areas, will be plugged and abandoned and surrounding areas remediated by October 15, 2028. Further, within 180 days after the effective date of this Permit, the Project will install suitable erosion control best management practices (BMPs) between those oil wells and the adjacent waters of the United States and maintain such BMPs in good working condition until the wells are abandoned and remediated as described in section (a) above.

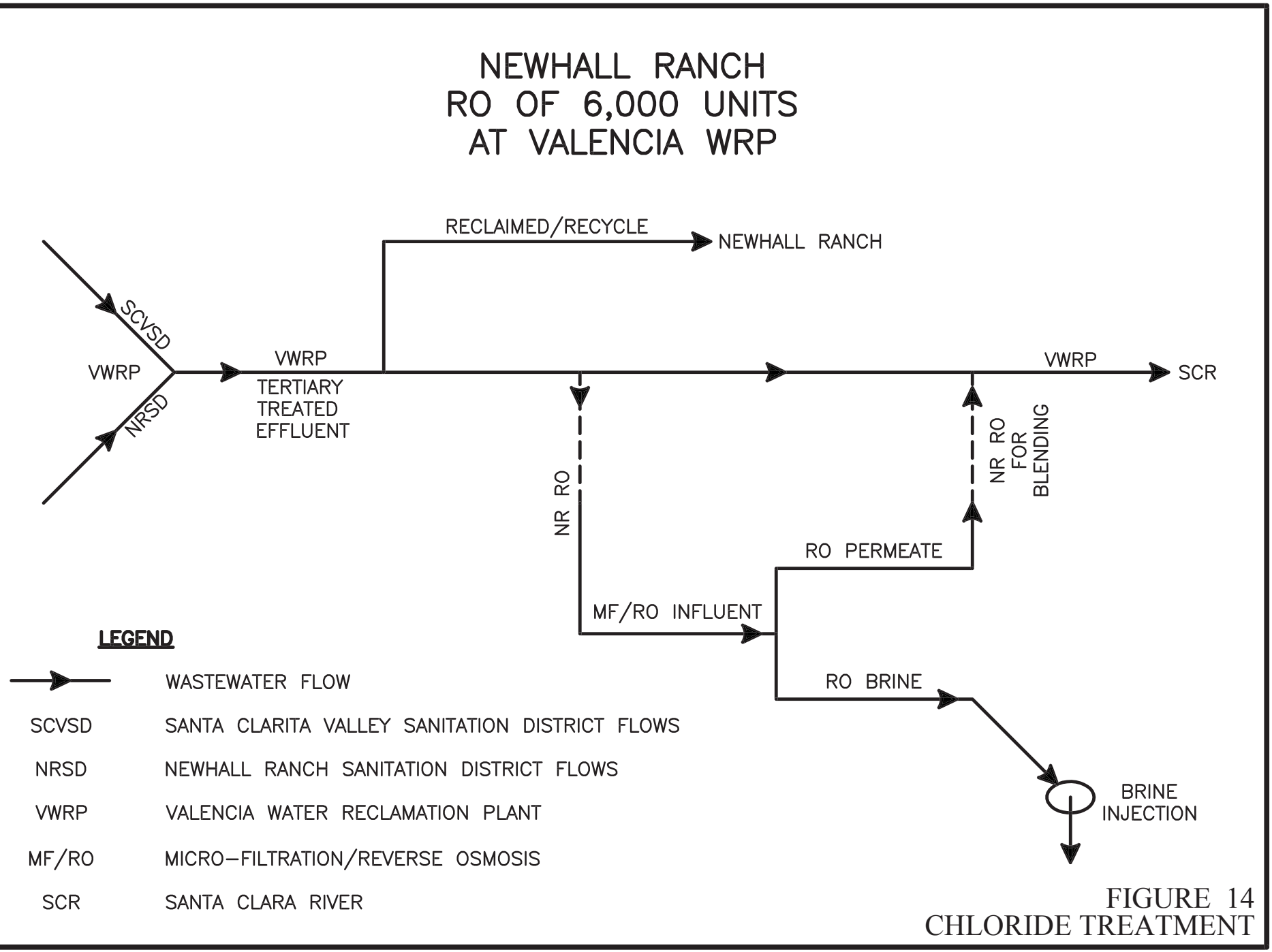
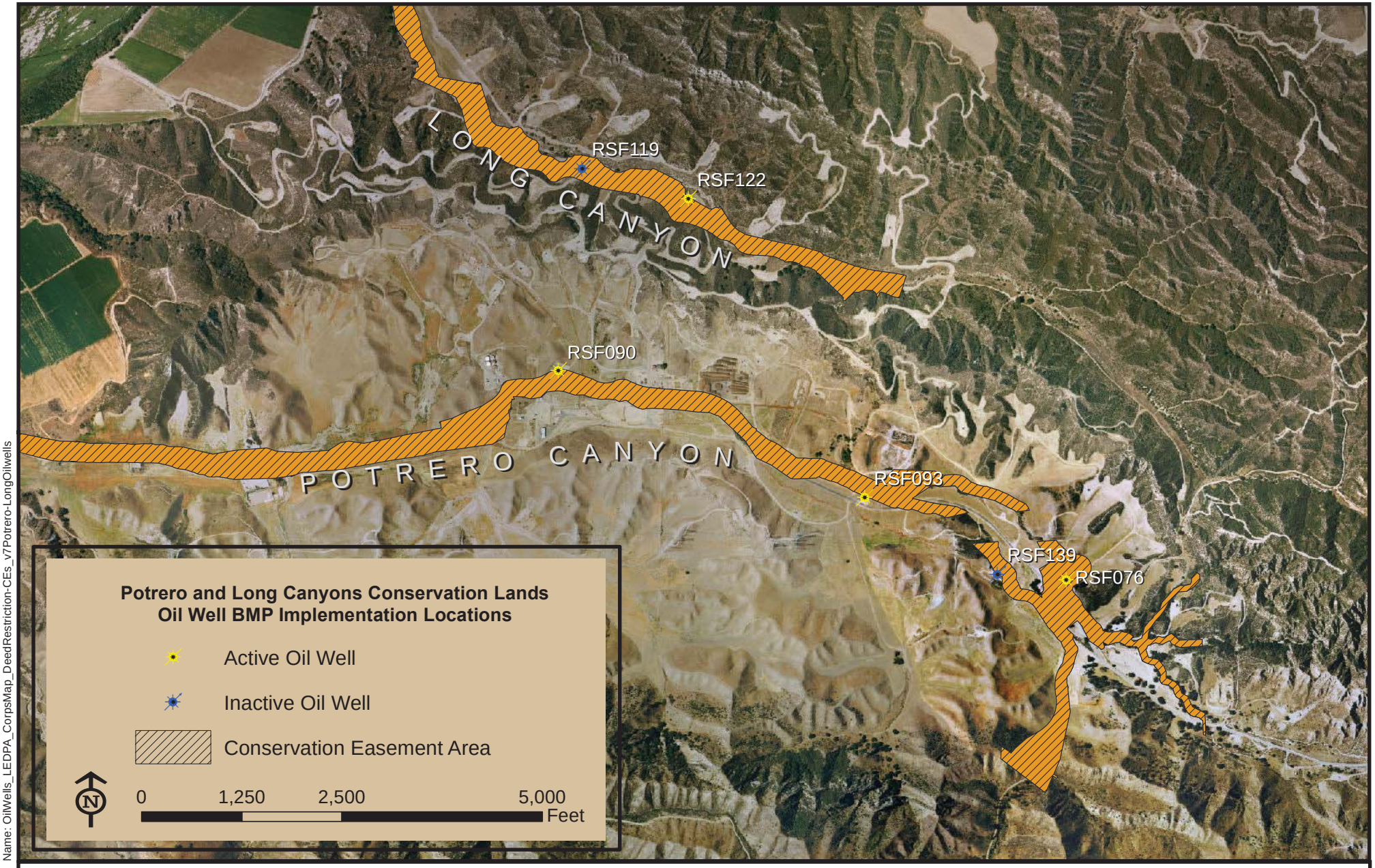


FIGURE 14
CHLORIDE TREATMENT

\\PACIFIC\DWG\721030\RO OF 6000 UNITS AT VWRP.DWG 05-24-11 07:48:40 LAYOUT: EXHIBIT



Name: OilWells_LEDPA_CorpsMap_DeedRestriction-CEs_v7Potrero-LongOilwells

RMDP
APPENDIX A

RMDP MAINTENANCE MANUAL
STORM DRAIN AND WATER QUALITY FEATURE
ROUTINE MAINTENANCE PRACTICES

APPENDIX A
RMDP MAINTENANCE MANUAL

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APPENDIX A
RMDP MAINTENANCE MANUAL

1.0 INTRODUCTION AND BACKGROUND

The development of the Newhall Ranch Specific Plan (NRSP) requires that stormwater runoff, dry weather urban runoff, and other waters discharged from the project satisfy Los Angeles Basin Plan, Los Angeles County MS4 Permit, Construction NPDES Permit, and NRSP Sub-Regional Stormwater Mitigation Plan requirements. Additional requirements are developed from specific planning areas during flood protection design reviews, Standard Urban Storm Water Mitigation Plan (SUSMP) review, and final transportation infrastructure elements needed to satisfy traffic circulation. A Resource Management and Development Plan (RMDP) has been developed to describe construction of facilities to meet these various requirements, specifically where impacts from the facilities occur to native habitats or special-status species under the jurisdiction of California Department of Fish and Game (CDFG) or Army Corps of Engineers (Corps).

Construction of many of the facilities will require authorization under several environmental permits: (1) Master Streambed Alteration Agreement (MSAA) from CDFG; (2) Individual 404 Permit from Corps; (3) 401 Water Quality Certification or WDRs from Los Angeles Regional Water Quality Control Board (RWQCB); and (4) Biological Opinion from US Fish and Wildlife (USFWS). These permits and approvals also specify water quality, treatment, and flow requirements for waters leaving the project site in addition to specific restrictions and mitigation measures for the protection of sensitive environmental resources. Facilities that may be required include: Debris Retaining Inlets (DRIs); Dry Extended Detention Basins; Infiltration Facilities; Wetponds; Vegetated Swales; Culverts; Drop Structures; Grade Control Structures; Storm Drain Outfalls; Bridges; Bridge abutments; and Bank Stabilization. The RMDP describes the NRSP development along the Santa Clara River, its main Tributaries (Castaic Creek, Chiquito Canyon, San Martinez Grande, Potrero Canyon, Long Canyon, and Lion Canyon) and minor unnamed drainages (Middle, Ayers, Magic Mountain canyons, and others) with specific focus on elements within jurisdiction.

Of note, many of the treatment features include components that are “naturalized,” whereby treatment is dependent upon such things as wet soils, open/ponded water, native and wetland vegetation growth, buried or vegetated rip-rap or gravel, or other components that mimic the natural environment. As the more anthropogenic features (hard armoring, gunite, grouted riprap, pavement, soil cement, concrete, pipe, or other engineering systems) are integral to the systems, it is necessary to identify the extent and frequency of various maintenance activities that may occur and describe impacts that may result.

APPENDIX A
RMDP MAINTENANCE MANUAL

1.1 Maintenance Manual Organization

This manual has been organized into the following Sections:

1.0 Introduction and Background
- 1.1 Maintenance Manual Organization
- 1.2 Storm Drain System Features
  - 1.2.1 Partially-Engineered Open Channels
  - 1.2.2 Bank Stabilization on the Santa Clara River
- 1.3 Need for Maintenance
- 1.4 Regulatory Setting
- 1.5 Developer Responsibilities Prior to Transfer
- 1.6 Owner/Permittee Responsibilities
- 1.7 Effects of Maintenance Activities
  - 1.7.1 Impact of Emissions from Maintenance

2.0 Maintenance Manual
- 2.1 General Measures
  - 2.1.1 Access, Work Zone Restrictions & Monitoring
  - 2.1.2 Special-Status Aquatic Species Avoidance/Mitigation
  - 2.1.3 Special-Status Bird Species Avoidance/Mitigation
  - 2.1.4 Special-Status Mammal, Reptile, and Insect Species Avoidance/Mitigation
  - 2.1.5 Invasive Species Control
- 2.2 Feature-Specific Measures
  - 2.2.1 Channel Clearing Near Bridges
  - 2.2.2 Removal of Vegetation from Rip-Rap
  - 2.2.3 Cleaning Storm Drain Outfalls
  - 2.2.4 Bridge Repair
  - 2.2.5 Repairs to Bank Stabilization
  - 2.2.6 Water Quality Treatment and Flow Attenuation Facilities
  - 2.2.7 Restored Tributaries

3.0 Associated Documents

1.2 Storm Drain System Features

Various types of facilities may be constructed in response to meeting treatment and hydromodification control standards for development area runoff. Each feature is designed to meet certain functions, primarily related to flow attenuation or control of hydromodification and water quality treatment through removal of pollutants of concern. While certain features

are depended upon only for infiltration/control of irrigation dry weather urban runoff, others may be dedicated to treating the first flush of a storm event. Regional control features (such as the restored tributaries, extended detention basins, and wetponds/lakes) may be integral to passing the entire flow from the watershed while providing infiltration, attenuation, and water quality treatment.

Each facility is likely to include stormwater inlet or outlet structures, soil cement/gunite/grouted or un-grouted rip-rap bank stabilization, and access points. The runoff controls are integral to the overall discharge treatment train (such as Debris Retaining Inlets, flow splitters, and catch basin inserts) but due to their physical location may not be within the limits of RMDP jurisdiction, and as such are not subject to the RMDP permit conditions or maintenance provisions/restrictions. To the extent that the RMDP permits provide coverage for impacts to biological resources similar to those that may develop at these features, it is intended that the RMDP Maintenance Manual can be utilized. The long-term use of the RMDP Maintenance Manual for non-jurisdictional features is at the discretion of the Permittee for such maintenance (Newhall Land, Home Owners Association (HOA), Landscape Maintenance District (LMD), Los Angeles County Department of Public Works (LACDPW), or other 3rd Party).

1.2.1 Partially-Engineered Open Channels

In the Tributaries, geomorphic principles will be used in combination with on-site controls to design stable stream channels given the expected hydrologic and sediment regimes of each tributary. A minimum of hard, engineered structural elements will be used within the stream channel so that a natural appearance will be preserved while the new stream channel form can remain stable and provide commensurate stream functions and values. The NRSP includes five partially-engineered open channels: Chiquito Canyon, San Martinez Grande Canyon, Lion Canyon, Long Canyon, and Potrero Canyon. These open channels will include management measures (a combination of in-stream grade control structures (point stabilizers and step-drop pools), bank protection, and stormwater runoff volume reduction and detention) to protect the channel bed and banks from hydromodification impacts.

The grade control structures are designed to contain the hydraulic “jump” of the ultimate drop in streambed elevation within the structure so higher velocities are dissipated within this area. The drop may be from 5 to 40 feet in vertical height (the largest of which is at the Lion Canyon Drainage confluence with the Santa Clara River. The hard structures may be backfilled with natural soil to re-establish the existing streambed.

1.2.2 Bank Stabilization on the Santa Clara River

While the Santa Clara River will generally remain in a natural condition, the RMDP includes installation of bank stabilization along portions of the Santa Clara River over the approximately next 20 years for bridge abutments and flood control stabilization for various development projects. The location of bank stabilization along the river was selected so that it would generally be located in non-jurisdictional upland areas adjacent to the river.

1.3 Need for Maintenance

LACDPW requires that all flood control and drainage improvements be maintained to ensure performance at their design levels. As described below, both hard and soft systems may require Minor and Major Maintenance to restore intended functions. Many of the features are components of restored creek systems, and as such, should require little to no routine minor maintenance. Major maintenance may be required in the event of a failure or damage from an unusually large storm (> than the 10 year event), and may be expected, if ever, once in a decade or less frequently. Minor maintenance may occur at frequencies from monthly, quarterly, annually, or other frequency determined during design (life cycle/replacement period).

These facilities generally are designed to reduce flow velocities, and therefore may create nuisance standing water, sediment deposition, and excessive growth conditions if not properly maintained. Maintenance involves the periodic inspection of the improvements to: (1) verify that the structures are intact; (2) monitor vegetative growth at or near the structures that may affect the integrity of the structure; and (3) determine if sediment or vegetation is blocking the conveyance of storm flows. Vegetation and accumulated sediment would be removed when the design capacity has been reduced to pre-determined levels and any damage that impairs the function of the structure would need to be repaired.

Periodic vegetation removal within the River and main Tributaries would not be required under the RMDP. However, individual structures within the conveyance system will require some maintenance, such as removal of woody vegetation, sediment and debris that may block or impede the function of inlets, outlets, culverts, drop structures, water quality and flow attenuation basins, and infiltration structures. Other features may be dependent upon routine scarification of the ground surface to maintain intended function, such as with infiltration basins, and retention basins, or to clear standing water from outfalls or infiltration swales. A third class of treatment facilities are wholly dependent upon establishment of stable wetland and open water habitats, with most routine maintenance restricted to removal of accumulated sediments and replacement of wetland vegetation at established service intervals.

This manual also includes a monitoring and remedial response plan for stabilized tributary drainages where major flood events could precipitate maintenance events that necessitate repair, replacement, or modification of an improperly functioning channel system. In those cases, review of the project may be appropriate as a Maintenance action or as a Construction Project depending on the extent of repairs/replacement or design changes that substantially alter the extent or nature of the original project impacts.

As discussed above, many of the control features are constructed outside of Agency jurisdiction (i.e., waters of the U.S. or waters of the State). As maintenance of these features may, from time to time, encounter issues similar to those encountered at features in the jurisdictional zones, at the discretion of the Permittee, this Maintenance Manual, and the Subnotification process, may be used to notify Agencies of proposed maintenance activities. It is expected that the following maintenance activities, in general, will not submit pre-maintenance notification or require any reporting due to their size and likelihood of generating sensitive habitats or supporting special-status species:

- Vegetation clearing and/or sediment removal at Debris Basins with <5,000 cubic yards of debris capacity.
- Vegetation clearing or sediment removal of Debris Retaining Inlets (DRIs).
- Vegetation clearing or sediment removal from seasonally dry culverts and outlets, if maintenance is conducted during periods of no flowing water, and nesting birds are not present.
- Areas where “permanent impacts” were determined and mitigated for during the Subnotification Process and special-status species habitat is not present or reasonably expected at the time of maintenance activities.
- Visual Inspections, where no equipment access is required. This may include hand trimming of brush, scrub species, or minor pruning of native trees to facilitate access (foot trail).

It is anticipated that all other maintenance activities would provide notification to the applicable Agencies to ensure adequate protection of Federal and State Endangered (ESA) and California Species of Special Concern species during maintenance activities, although where jurisdiction is not present, that notification will be at the discretion of the owner.

1.4 Regulatory Setting

This Maintenance Manual is a component of the jurisdictional permits for the implementation of the Resource Management and Development Plan (RMDP) for the Newhall Ranch Specific Plan Area. This manual constitutes the post-construction maintenance plan for facilities constructed

pursuant to RMDP approvals. The RMDP permits recognize maintenance beyond the term of the maintenance of the NRSP, therefore 50 year permit terms Apply to RMDP permits, including: **Master Streambed Alteration Agreement (CDFG MSAA #1600-2004-0016-R5); Incidental Take Permit – Multiple Species (CDFG ITP #2081-XXXXXXXXX); Master Corps 404 Permit (404 Permit #2003-01264-AOA); 401 Certification/Waste Discharge Requirements (WDR) LARWQCB (WDR #XX-XXX); and Biological Opinion (FWS BO #XX-XXX-X)**. Collectively these permits and agreements constitute the environmental approvals necessary to construct and maintain facilities within waters of the United States and/or waters of the State.

The features described in this Maintenance Manual are also integral to the implementation of the Newhall Ranch Specific Plan (NRSP) stormwater management plans, and in many cases, specifically implement concepts of hydromodification control, zero discharge, nuisance flow management, first flush trash and debris containment, and other concepts of federal, state, and local storm water requirements. The NRSP stormwater plan involves three submittal Tiers, to be completed at various stages of project development, approval and construction. Tier plans are intended to be further refined as project elements are taken to final design and approval. The first Tier is the Sub-Regional Stormwater Mitigation Plan (SWMP), which describes management of the entire NRSP area. The Sub-regional SWMP includes concept-level, low impact/site design development criteria and source control, treatment control, and hydromodification control Best Management Practices (BMPs) to be incorporated into each development project within the sub-region. The NRSP Sub-regional SWMP has been developed using a watershed-based approach that addresses pollutants of concern and hydrologic conditions of concern that can affect aquatic and riparian habitat and natural resources, including species associated with these habitats and natural communities. The Tier one plan has been submitted to LA Regional Water Quality Control Board for review.

The second Tier involves submittal and approval of a Project Water Quality Technical Report (WQTR) by Los Angeles County. The WQTR is prepared to ensure consistency with the terms and content of the NRSP Sub-Regional SWMP for each project within the sub-region (e.g., Landmark Village, Mission Village, Homestead Village, and Potrero Valley). The Project WQTR will provide more specific information and detail concerning how the provisions of the NRSP Sub-Regional SWMP will be implemented within the area covered by the Project WQTR, based upon the actual proposed land uses from the tentative tract maps filed with the County of Los Angeles.

The third Tier consists of a final Project SUSMP (Standard Urban Storm Water Mitigation Plan) that will be consistent with the terms and content of both the NRSP Sub-Regional SWMP and the Project WQTR and Drainage Concept Report for each project within the sub-region. The Project SUSMP will demonstrate that the project applicant is complying with the County-certified EIR mitigation measures. The Project SUSMP will identify, at a minimum: (1)

implementation of low impact/site design strategies (as appropriate); (2) source control BMPs; (3) treatment control BMPs; (4) hydromodification control BMPs; and (5) the mechanism(s) by which long-term operation and maintenance of all structural BMPs will be provided, at the project site level.

This Maintenance Manual provides a summary of anticipated maintenance activities, expected impacts from maintenance activities, and minimization/mitigation measures incorporated into flood protection, stormwater, and nuisance water control system operations to meet the long-term maintenance needs of the SUSMP. Typical approaches to maintenance for each of the features is presented along with standard restrictions and special-status species protection measures to ensure impacts from such operations are minimized. These measures are generally the same as those required during new construction.

1.5 Developer Responsibilities Prior to Transfer

Prior to the transferring of a storm drain or water quality feature to the ultimate system owner/Permittee, it is the responsibility of the Developer to maintain the system in proper operating condition. This may include maintaining vegetation growth, as needed, to facilitate the final inspection and acceptance of the structure by the long term maintenance owner/Permittee. The original Subnotification authorization for construction of the feature will be considered enforce during this period of time and no further Subnotifications will be completed for any maintenance activities prior to transfer. As some temporal habitat may form at the structure, the species protection measures required for construction shall be followed during this transition period (e.g., restrictions on equipment operating in ponded water, storage of petroleum products, nesting restrictions, etc.).

1.6 Owner/Permittee Responsibilities

Each of the features contemplated in the SUSMP will be transferred to another entity for long-term operation and maintenance. This manual provides structure maintenance guidelines to the following anticipated post-development owners/permittees:

- LACDPW, LMD or an HOA will assume responsibility for maintaining the improvements as part of their routine maintenance program.
    - A Geologic Hazard Abatement District (GHAD) may also be developed to assume responsibility and ownership of these features. If a GHAD is established, it would possess specific funding for minor and major maintenance/repairs, a professional management team with technical expertise in the features being maintained; and responsibility for system wide operations.

- LACDPW will likely assume operation and maintenance responsibilities for the BMPs that are constructed by the County or are "regional" in nature.
- Upon agreement, LACDPW may assume operations and maintenance responsibilities for BMPs constructed by others on County property, including right-of-ways or stormwater easements.
- Other entities, such as an HOA, an LMD, or an independent maintenance contractor may have maintenance responsibility for BMPs located on private property, such as parking lots.
- LA County will have overriding authority, thru Builder-Agreements, to restore proper function to any feature they deem necessary in the event the HOA or LMD fails to perform maintenance.
- Maintenance activities may be contracted out to local firms; however, the maintenance responsibility remains with the owner.
- The natural or created creek channel and riverbed areas, which may contain HOA, LMD or LA County facilities, will be under the stewardship and control of Centers for Natural Land Management (CNLM) with maintenance easements, established as necessary, to ensure that flood protection and treatment/conveyance systems function properly. The open-space areas between hard structures are expected to be free of routine maintenance, reverting to a "natural" state.

As this document applies to a development that will be implemented over approximately 20 years, it is reasonable to expect technological advances to result in modification of the flood protection and runoff treatment systems. Therefore, this document should be considered a "living document," subject to addition and revision. The Subnotification process, described further below, may be used for requesting Agency approval of revisions or changes to this document.

1.7 Effects of Maintenance Activities

The project includes routine maintenance activities associated with the proposed bank stabilization, bridges, culverts, storm drain outlets, inlet structures, and water quality/storm flow attenuation features. Impacts were evaluated for the maintenance activities described later in this document and are presented here for ease of reference.

Maintenance activities would be implemented on an as-needed basis. The widths of the proposed bank stabilization and bridges were designed to allow the vegetation in the river channel to grow to its natural maximum density without the need for clearing the channel for conveyance. The main tributary drainages have been designed to be bed-stable, with hydromodification effects mitigated while still carrying the design storm flow. As such, the length of bank stabilization to

be inspected and cleared of vegetation under this program is limited to exposed gunite bank stabilization at bridge abutments. This manual, as a component of the RMDP, shall constitute the approved maintenance procedures to minimize and avoid impacts to endangered species and to minimize impacts to other riparian resources and special-status species. The following project design features have been incorporated to reduce, and in many cases, eliminate routine maintenance, and therefore, avoid impacts:

- The use of buried soil cement, and other buried bank stabilization, eliminates the need to clear a zone at the base of the riverbank or creek-bank where buried bank stabilization is located.
- Grade control and drop structures are designed to be primarily self-cleaning with limited need for sediment removal or vegetation control.
- Bridges, in general, are designed with sufficient clearance to allow passage of flood flows while allowing natural vegetation in the channel bottom.
- Large trees would be allowed to grow in the upland or transitional habitat zones (typically consisting of upland scrub and grassland mitigation areas constructed along the margins of stream courses), at or near buried soil cement and other bank stabilization features.

Where maintenance is necessary, activities would be subject to the *General* and *Feature-Specif*ic Maintenance Measures discussed in this manual (*Sections 2.1 and 2.2, below*). Based on these considerations, routine maintenance activities in the project area are anticipated to be minor in scope and effect, although the location, frequency, and aerial extent of future maintenance activities cannot be fully predicted. Typical impacts to riparian habitat due to a single routine maintenance activity can be estimated as is done in the following examples:

Example No. 1: Channel Clearance near Bridges. There is a need to clear vegetation 25 feet upstream and downstream of proposed culverts and certain bridges. This clearing would be accomplished by mechanical equipment that would access the riverbed or creekbed via a service ramp or across dry scrub habitat, travel across the riverbed or creekbed to the bridge or culvert location, and then remove woody vegetation (*i.e.*, large trees that may collect flood debris). The estimated extent of impact for each bridge is indicated in the *Feature-Specific* section below.

Example No. 2: Removing Trees from Rip-rap. Owner/Permittee will need to remove large trees that are four or more inches in diameter from rip-rap, and from a 15-foot-wide zone at the base of the rip-rap or exposed gunite lining at bridges to ensure that the structural integrity of the rip-rap or lining is maintained. If feasible, trees would be removed by hand or equipment from the service road at the top of the bank stabilization. If this method is not feasible, crews would access the riverbed from the nearest service ramp, travel across the riverbed to the maintenance

location, then remove vegetation working from a 30-foot-wide zone at the base of the rip-rap or exposed gunite. Only hand held equipment would be used to cut the vegetation. Equipment would primarily be limited to that equipment necessary to provide access to the upper branches of large trees and equipment necessary to haul the cut materials from the riverbed. Typical disturbance of riverbed habitats under this example would be less than 0.2 acre, assuming a work area 100 by 30 feet and a 500-foot-long temporary access road.

Example No. 3: Clearing Storm Drain Outlets. There will be an ongoing need to remove sediments and woody vegetation from storm drain outlets. The proposed outlet design would include concrete, or grouted riprap, apron on selected outlets to discourage the establishment of vegetation at the mouth of the outlet. If sufficient vegetation and sediments accumulate at an outlet, owner/Permittee would need to access the river and remove the obstruction using light equipment (e.g., bobcat, small excavator, backhoe, D-6 Dozer) or hand crews, and create up to a 10-foot-wide pilot channel up to 75 feet in length. Typical disturbance of riverbed habitats under this example would be less than 0.2 acre.

Example No. 4: Clearing Debris Basin/water quality or flow attenuation basins. There will be an ongoing need to remove sediments and woody vegetation from debris basins and water quality or flow attenuation basins to ensure adequate flood capacity and infiltration performance. The proposed designs would include soft-bottom basin areas with subdrains, underdrains, and specialized outlet structures, some to discourage the establishment of vegetation while in other areas being fully dependent upon vegetation establishment for proper function. If sufficient vegetation and sediments accumulate, vegetation is no longer performing as intended, or infiltration is no longer occurring, owner/Permittee would need to access the feature and remove, repair, replace or otherwise correct the deficiency using heavy equipment (e.g., Dozer, loader, excavator), light equipment (e.g., Bobcat tractors) and/or hand crews. The extent of maintenance is graphically indicated in *Feature-Specific* information below. Depending on the capacity of any given structure, the acreage would be highly variable (from less than 1 acre-foot up to 50 acre-foot capacity).

1.7.1 Impact of Emissions from Maintenance

Maintenance activities would cause emissions due to equipment operation, vehicle trips, and dust emissions associated with the periodic clearing of vegetation from bridges and culverts, removal of vegetation from rip-rap, and repair of flood control facilities. These emissions would be localized and short-term. Emissions from periodic maintenance activities are expected to be minimal.

2.0 MAINTENANCE MANUAL

2.1 General Measures

Subsection 7.7 of the RMDP provides descriptions of restrictions and conditions to avoid, minimize, and mitigate impacts to sensitive habitats and special-status species during implementation of maintenance activities. The general mitigation measures adopted for Construction under the RMDP are applicable to Maintenance Activities as listed below. Slight modification to the Construction measures have been made where necessary to make measures specific to Maintenance.

2.1.1 Access, Work Zone Restrictions & Monitoring

A-1 Maintenance plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to maintenance activities. In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP), as applicable, shall include the following minimum BMPs. As many Maintenance activities may not require a SWPPP due to project size, where necessary, a separate written plan shall be implemented with these requirements. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during maintenance. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP, and noted on maintenance plans where appropriate, to avoid impacting special-status species during maintenance activities:

- Avoid planting or seeding invasive species in development areas within 200 feet of native vegetation communities.
- Provide location and details for any dust control fencing along Project boundaries (BIO-71).
- Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the 404 Permit or 1603 Agreement.
- Silt settling basins installed during the maintenance process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes.
- If a stream channel has been altered during the construction and/or maintenance operations, its low flow channel shall be returned as nearly as practical to

pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre-Project grade, to the extent practical, unless it represents a wetland restoration area.

- Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.
- Staging/storage areas for construction equipment and materials shall be located outside of the ordinary high water mark.
- Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water.
- Stationary equipment such as motors, pumps, generators, and welders which may be located within the riverbed maintenance zone shall be positioned over drip pans. No fuel storage tanks shall be allowed in the riverbed.
- No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any maintenance, or associated activity of whatever nature, shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the permit. When maintenance operations are completed, any excess materials or debris shall be removed from the work area.
- No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow.
- The operator shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.
- The operator shall not permit pets on or adjacent to the maintenance site.
- No guns or other weapons are allowed on the maintenance site during maintenance, with the exception of the security personnel and only for security functions. No hunting shall be authorized/permitted during maintenance (BIO-70).

A-2 All native riparian trees with a three-inch diameter at breast height (dbh) or greater in temporary maintenance areas shall be replaced using one- or five-gallon container plants, containered trees, or pole cuttings in the temporary maintenance areas in the winter following the maintenance disturbance. The mitigation ratios for temporary impacts to

vegetation communities are described in BIO-2. The growth and survival of the replacement trees shall meet the performance standards specified in BIO-6. In addition, the growth and survival of the planted trees shall be monitored until they meet the self sustaining success criteria in accordance with the methods and reporting procedures specified in BIO-6, BIO-7, BIO-11, and BIO-12 (BIO-15).

A-3 Native vegetation, which is free of invasive species, within temporary maintenance work areas may be mulched and spread, where appropriate, over the temporary impact areas once maintenance work is complete in order to facilitate revegetation. If vegetation is cut to ground level only, with the likelihood of re-growth, then cuttings may be removed from the maintenance site for recycling.

A-4 Man-made features (such as debris basins, water quality basins, infiltration structures, and water quality swales) constructed in upland locations are not jurisdictional features, however, measures in this maintenance plan are to be applied to those structures to protect fish and wildlife resources..

A-5 Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG and USFWS (BIO-45).

A-6 Silt settling basins installed during the maintenance process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes (BIO-70).

A-7 Water containing mud, silt, or other pollutants from maintenance activities shall not be allowed to enter a flowing stream or be placed in locations that may be subject to normal storm flows during periods when storm flows can reasonably be expected to occur (BIO-49).

A-8 If a stream channel has been altered during maintenance, the low flow channel shall be returned as nearly as practical to pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre-Project grade, to the extent practical, unless it represents a wetland restoration area (BIO-70).

A-9 Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur (BIO-70).

A-10 Staging/storage areas for maintenance equipment and materials shall be located outside of the ordinary high water mark (BIO-70).

A-11 Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water (BIO-70).

A-12 Stationary equipment, such as motors, pumps, generators, and welders that may be located within the riverbed maintenance zone shall be positioned over drip pans. No fuel tanks shall be allowed in the riverbed (BIO-70).

A-13 No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any maintenance activity shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the permit. When maintenance is completed, any excess materials or debris shall be removed from the work area (BIO-70).

A-14 No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow (BIO-70).

A-15 Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as authorized by CDFG, Corps and USFWS.

A-16 The Permittee shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. All trash should be removed at the end of each work day (BIO-70).

A-17 If arroyo toad are present, the Permittee's maintenance activities shall be limited to the period of daylight hours; no night work is authorized.

A-18 To reduce the potential for the spread of New Zealand mud snails and weeds (including weed seeds) during Project clearing and maintenance, all heavy equipment proposed for use on the Project site shall be verified cleaned (including wheels, tracks, undercarriages, and bumpers, as applicable) before delivery to the Project site. Equipment must be documented as mud snail and weed free upon delivery to the Project site initial staging area, including: (1) vegetation clearing equipment (skid steer loaders, loaders, dozers, backhoes, excavators, chippers, grinders, and any hauling equipment, such as off-road haul trucks, flat bed, or other vehicles); (2) earth-moving equipment (scrapers, dozers, excavators, loaders, motor-graders, compactors, backhoes, off-road water trucks, and off-road haul trucks); and (3) all Project-associated vehicles (including personal vehicles) that, upon inspection by the monitoring biologist, are deemed to present a risk for spreading mud snails or weeds. Equipment shall be cleaned at existing construction yards or at a wash station. The biological monitor shall document that all construction equipment (as described above) has been cleaned prior to working within the Project work site. Any equipment/vehicles determined to not be free of mud snails and weeds shall immediately be sent back to the originating construction yard for washing, or wash station where rinse water is collected and disposed of in either a sanitary sewer or other legal point of disposal. Equipment/vehicles moved from the site must be inspected, and

re-washed as necessary, prior to re-engaging in maintenance activities in the Project work area. A written daily log shall be kept for all vehicle/equipment washing that states the date, time, location, type of equipment washed, methods used, and location of work (BIO-52).

2.1.2 Special-Status Aquatic Species Avoidance/Mitigation

B-1 Prior to initiating maintenance of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other maintenance activities that result in any disturbance to the banks or wetted channel, aquatic habitats within maintenance sites and access roads, as well as all aquatic habitats within 300 feet of maintenance sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps and CDFG shall be notified at least 14 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any maintenance work in the riverbed. If there is evidence that fish spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by USFWS. If surveys determine that gravid fish are present, that spawning has recently occurred, or that juvenile fish are present in the proposed maintenance areas, all activities within aquatic habitat will be suspended. Maintenance within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area (BIO-43).

B-2 Conduct focused surveys for California red-legged frogs. Prior to initiating maintenance of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other maintenance activities, all maintenance sites and access roads within the riverbed as well as all riverbed areas within 1,000 feet of maintenance sites and access roads shall be surveyed at the appropriate season for California red-legged frogs. The applicant shall contract with a qualified biologist to conduct focused surveys for California red-legged frogs. If detected in or adjacent to the Project area, no work will be authorized within 500 feet of occupied habitat until the applicant provides concurrence from the USFWS to CDFG and Corps. If present, the applicant shall implement measures required by the USFWS Biological Opinion for California red-legged frog that either supplement or supersede these measures. If present, the applicant shall develop and implement a monitoring plan that includes the following measures in consultation with the USFWS and CDFG:

1. The applicant shall retain a qualified biologist with demonstrated expertise with California red-legged frogs to monitor all maintenance activities in potential red-legged frog habitat and assist the applicant in the implementation of the monitoring program. This person will be approved by the USFWS prior to the

onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of California red-legged frogs.

2. Prior to the onset of maintenance activities, the applicant shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:

   a. A detailed description of the California red-legged frogs, including color photographs;

   b. The protection the California red-legged frog receives under the Endangered Species Act and possible legal action that may be incurred for violation of the Act;

   c. The protective measures being implemented to conserve the California red-legged frogs and other species during maintenance activities associated with the proposed Project; and

   d. A point of contact if California red-legged frogs are observed.

3. All trash that may attract predators of the California red-legged frogs will be removed from work sites or completely secured at the end of each work day.

4. Prior to the onset of any maintenance activities, the applicant shall meet on site with staff from the USFWS and the authorized biologist. The applicant shall provide information on the general location of maintenance activities within habitat of the California red-legged frogs and the actions taken to reduce impacts to this species. Because California red-legged frogs may occur in various locations during different seasons of the year, the applicant, USFWS, and authorized biologist will, at this preliminary meeting, determine the seasons when specific maintenance activities would have the least adverse effect on California red-legged frogs. The goal of this effort is to reduce the level of mortality of California red-legged frogs during maintenance.

5. Work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG. All workers will be advised that equipment and vehicles must remain within the fenced work areas.

6. The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any California red-legged frogs from within the fenced area to suitable habitat outside of the fence. If California red-legged frogs are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG.

7. Fencing to exclude California red-legged frogs will be at least 24 inches in height.

8. The type of fencing must be approved by the authorized biologist and the USFWS/CDFG.

9. Maintenance activities that may occur immediately adjacent to breeding pools or other areas where large numbers of California red-legged frogs may congregate will be conducted during times of the year (fall/winter) when individuals have dispersed from these areas. The authorized biologist will assist the applicant in scheduling its work activities accordingly.

10. If California red-legged frogs are found within an area that has been fenced to exclude California red-legged frogs, activities will cease until the authorized biologist moves the California red-legged frog(s).

11. If California red-legged frogs are found in a maintenance area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the California red-legged frogs. The authorized biologist in consultation with USFWS/CDFG will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist and USFWS.

12. Any California red-legged frogs found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, access to deep perennial pools, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.

13. The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.

14. Staging areas for all maintenance activities will be located on previously disturbed upland areas, if possible, designated for this purpose. All staging areas will be fenced.

15. To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (DAPTF 2009) will be followed at all times (BIO-18).

B-3 Prior to initiating maintenance of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other maintenance activities, all maintenance sites and access roads within the riverbed as well as all riverbed areas within 500 feet of maintenance sites and access roads shall be surveyed at the appropriate season for southwestern pond turtle. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and June 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. The applicant shall develop a Plan to address the relocation of southwestern pond turtle. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for this species; identify the locations where more intensive efforts should be conducted; identify the habitat and conditions in the proposed relocation site(s); the methods that would be utilized for trapping and relocating individuals; and provide for the documentation/recordation of the numbers of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities within potentially occupied habitat.

If southwestern pond turtles are detected in or adjacent to the Project, nesting surveys shall be conducted. Focused surveys for evidence of southwestern pond turtle nesting shall be conducted in, or adjacent to, the Project when suitable nesting habitat exists within 1,300 feet of occupied habitat in an area where Project-related ground disturbance will occur (*e.g.*, development, ground disturbance). If both of those conditions are met, a qualified biologist shall conduct focused, systematic surveys for southwestern pond turtle nesting sites. The survey area shall include all suitable nesting habitat within 1,300 feet of occupied habitat in which Project-related ground disturbance will occur. This area may be adjusted based on the existing topographical features on a case-by-case basis with the approval of CDFG. Surveys will entail searching for evidence of pond turtle nesting, including remnant eggshell fragments, which may be found on the ground following nest depredation.

If a southwestern pond turtle nesting area would be adversely impacted by maintenance activities, the applicant shall avoid the nesting area. If avoidance of the nesting area is determined to be infeasible, the authorized biologist shall coordinate with CDFG to

identify if it is possible to relocate the pond turtles. Eggs or hatchlings shall not be moved without written authorization from CDFG.

The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of southwestern pond turtle. Clearance surveys for pond turtles shall be conducted within 500 feet of potential habitat by the authorized biologist prior to the initiation of maintenance each day. The resume of the proposed biologist will be provided to CDFG for approval prior to conducting the surveys (BIO-50).

B-4 Prior to maintenance activities, a qualified biologist shall conduct surveys for the western spadefoot toad within all portions of the Project site containing suitable breeding habitat. If the western spadefoot toad is found on site, measures including habitat creation at a 2:1 ratio, pre-construction surveys, relocation of adults/tadpoles and egg masses, and monitoring for five years will be implemented.

B-5 Requires focused surveys for the spring snail (*Pyrgulopsis castaicensis* n. sp.) by a qualified biologist prior to the commencement of maintenance activities in any drainage area supporting perennial flow. Any individuals of the *Pyrgulopsis castaicensis* n. sp. found within the Middle Canyon drainage shall be relocated to appropriate habitat within Middle Canyon Spring. If *Pyrgulopsis castaicensis* n. sp. are discovered during aquatic and semi-aquatic pre-maintenance 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 *Pyrgulopsis castaicensis* n. sp. located, the conditions of the area, and where the species has been relocated to, if applicable, shall be submitted to CDFG within 60 days following the relocation (BIO-86).

B-6 Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/USFWS. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS.

The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/USFWS, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (*i.e.*, boulders, large logs, or other CDFG/USFWS-approved materials) placed in the channel at the point of each curve (*i.e.*, on alternating sides of the channel). If emergent aquatic vegetation is present in the original channel, the applicant will transplant suitable vegetation into the diversion

channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area.

Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed maintenance areas.

At the conclusion of the diversion, either at the commencement of the winter season, or the completion of maintenance, the applicant will coordinate with CDFG/USFWS to determine if the diversion should be left in place or the stream returned to the original channel. If CDFG/USFWS determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (*i.e.*, while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (*i.e.*, boulders, large logs, or other CDFG/USFWS-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place (BIO-45).

B-7 During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless USFWS personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and USFWS within 24 hours (BIO-46).

B-8 Installation of bridges, culverts, or other structures shall not impair the movement of fish and aquatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert crossings shall include provisions for a low flow channel where velocities are less than two feet per second to allow fish passage (BIO-48).

2.1.3 Special-Status Bird Species Avoidance/Mitigation

C-1 All maintenance and repair work, excluding emergency work (defined as maintenance activities of an urgent nature, requiring rapid implementation, but which do not otherwise meet the criteria of an emergency under Fish and Game Code, Section 1610), shall occur between August 1 and March 15 (which is outside of the breeding season for special-status riparian birds, such as the least Bell's vireo) for facilities along the Santa Clara

River. In-channel maintenance work that must occur between March 15 and August 1 in these areas shall follow the additional procedures below.

C-2 Within 30 days of ground-disturbing activities associated with maintenance activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically March through August in the Project region, or as determined by a qualified biologist), the applicant shall have weekly surveys conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the disturbance zone or within 300 feet (500 feet for raptors) of the disturbance zone. Pre-maintenance surveys shall include nighttime surveys to identify active rookery sites. The surveys shall continue on a weekly basis, with the last survey being conducted no more than seven days prior to initiation of disturbance work. If ground-disturbing activities are delayed, then additional pre-disturbance surveys shall be conducted such that no more than seven days will have elapsed between the survey and ground-disturbing activities (BIO-56).

C-3 If active nests are found, clearing and maintenance within 300 feet of the nest (500 feet for raptors) shall be postponed or halted, at the discretion of the biologist in consultation with CDFG, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. In the event that golden eagles establish an active nest in the River Corridor SMA, the buffers will be established in consultation with CDFG. Potential golden eagle nesting will be reported to CDFG within 24 hours. Limits of maintenance to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers and maintenance personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when maintenance activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFG in the annual mitigation status report (BIO-56).

C-4 For listed riparian songbirds (least Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo) USFWS protocol surveys shall be conducted. If active nests are found, clearing and maintenance within 300 feet of the nest shall be postponed or halted, at the discretion of the biologist in consultation with CDFG and USFWS, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. If no active nests are observed, maintenance may proceed. If active nests are found, work may proceed provided that maintenance activity is located at least 300 feet from active nests (or as authorized through the context of the Biological Opinion and 2081b Incidental Take Permit). This buffer may be adjusted provided noise levels do not exceed 60 dBA hourly Leq at the edge of the nest site as determined by a qualified biologist in coordination with a qualified acoustician (BIO-56).

If the noise meets or exceeds the 60 dBA Leq threshold, or if the biologist determines that the maintenance activities are disturbing nesting activities, the biologist shall have the authority to halt the maintenance and shall devise methods to reduce the noise and/or disturbance in the vicinity. This may include methods such as, but not limited to, turning off vehicle engines and other equipment whenever possible to reduce noise, installing a protective noise barrier between the nest site and the maintenance activities, and working in other areas until the young have fledged. If noise levels still exceed 60 dBA Leq hourly at the edge of nesting territories and/or a no-construction buffer cannot be maintained, maintenance shall be deferred in that area until the nestlings have fledged. All active nests shall be monitored on a weekly basis until the nestlings fledge. The qualified biologist shall be responsible for documenting the results of the surveys and the ongoing monitoring and for reporting these results to CDFG and USFWS (BIO-56).

C-5 For coastal California gnatcatcher, the applicant shall conduct USFWS protocol surveys in suitable habitat within the Project area and all areas within 500 feet of access or maintenance-related disturbance areas. Suitable habitats, according to the protocol, include "coastal sage scrub, alluvial fan, chaparral, or intermixed or adjacent areas of grassland and riparian habitats." A permitted biologist shall perform these surveys according to the USFWS' (1997a) Coastal California Gnatcatcher Presence/Absence Survey Guidelines. If a territory or nest is confirmed, the USFWS and CDFG shall be notified immediately. If present, a 500-foot disturbance-free buffer shall be established and demarcated by fencing or flagging. No Project activities may occur in these areas unless otherwise authorized by USFWS and CDFG. Maintenance activities in suitable gnatcatcher habitat will be monitored by a full-time qualified biologist. The monitoring shall be of a sufficient intensity to ensure that the biologist could detect the presence of a bird in the maintenance area (BIO-56).

C-6 Thirty days prior to maintenance activities, a qualified biologist shall conduct CDFG protocol surveys to determine whether the burrowing owl is present at the site. The surveys shall consist of three site visits and shall be conducted in areas dominated by field crops, disturbed habitat, grasslands, and along levee locations, or if such habitats occur within 500 feet of a maintenance zone. If located, occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If the burrowing owl is detected but nesting is not occurring, maintenance work can proceed after any owls have been evacuated from the site using CDFG-approved burrow closure procedures and after alternative nest sites have been provided in accordance with the CDFG Staff Report on Burrowing Owl Mitigation (10-17-95) (BIO-57).

C-7 Unless otherwise authorized by CDFG, a 500-foot buffer, within which no activity will be permissible, will be maintained between Project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently (BIO-57).

C-8 Results of the surveys and relocation efforts shall be provided to CDFG in the annual mitigation status report (BIO-57).

a. All surfaces on new antennae and phone/utility towers shall be designed and operated with anti-perching devices in conformance with APLIC standards to deter California condors and other raptors from perching. During maintenance the area shall be kept clean of debris, such as cable, trash, and construction materials. The applicant shall collect all microtrash and litter (anything shiny, such as broken glass), vehicle fluids, and food waste from the Project area on a daily basis. Workers will be trained on the issue of microtrash: what constitutes microtrash, its potential effects on California condors, and how to avoid the deposition of microtrash.

b. The applicant shall retain a qualified biologist with knowledge of California condors to monitor maintenance 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 maintenance areas, the qualified biologist shall be present at all times. 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 maintenance 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 maintenance area, no maintenance 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 maintenance area, no maintenance activity will occur until further authorization occurs from CDFG and USFWS.

c. To further protect California condor potentially foraging in the Project area over the long term from negative interactions with humans and/or artificial structures, the applicant or the JPA or the NLMO shall remove dead cattle

that are found or reported within 1,000 feet of a residential or commercial development boundary. Dead cattle shall be relocated to a predetermined location within the High Country SMA or Salt Creek area. The locations where carcasses shall be placed shall be a minimum of 1,000 feet from a development area boundary. Appropriate locations for transfer of carcasses include open grasslands and oak/grassland areas where condors can readily detect carcasses and easily land and take off without encountering physical obstacles such as powerlines and other utility structures. The proposed locations would be selected and approved by the CDFG and USFWS. Pursuant to this measure, a telephone number for reporting dead cattle shall be provided and actively maintained. Any cattle carcasses transferred to the relocation areas shall be reported to the USFWS Condor group (BIO-82).

2.1.4 Special-Status Mammal, Reptile, and Insect Species Avoidance/Mitigation

D-1 Prior to maintenance work, the applicant shall develop a relocation plan for coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, and coast patch-nosed snake. The Plan shall include the specific survey and relocation efforts that would occur for maintenance activities that occur both during the activity period of the special-status species (generally March to November) and for periods when the species may be present in the work area but difficult to detect due to weather conditions (generally December to February). Qualified biologists shall conduct surveys to capture and relocate individuals 30 days prior to maintenance activities in suitable habitat. The qualified biologist will be present during ground-disturbing activities immediately adjacent to or within habitat that supports populations of these species. Clearance surveys for special-status reptiles shall be conducted by a qualified biologist prior to the initiation of maintenance activities each day BIO-54).

D-2 Thirty days prior to maintenance activities in suitable habitat, a qualified biologist shall conduct a survey, within the proposed disturbance zone and within 200 feet of the disturbance zone, for American badger. If American badgers are present, occupied habitat shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den. Maternity dens shall be avoided during the pup-rearing season and a minimum 200 foot buffer established. This buffer may be reduced based on the location of the den upon consultation with the CDFG. Maternity dens shall be flagged for avoidance, identified on maintenance maps, and a qualified biologist shall be present during maintenance. If avoidance of a non-maternity den is not feasible, badgers shall be relocated either by trapping or by slowly excavating the burrow before or after the rearing season. Any relocation of badgers shall occur only after consultation with the CDFG (BIO-41).

D-3 Thirty days prior to maintenance activities in suitable habitat, a qualified biologist shall conduct a survey, within the proposed disturbance zone and within 200 feet of the disturbance zone, for San Diego desert woodrat. If active San Diego desert woodrat nests (stick houses) are identified within the disturbance zone or within 100 feet of the disturbance zone, a fence shall be erected around the nest site adequate to provide the woodrat sufficient foraging habitat, at the discretion of the qualified biologist in consultation with CDFG. Maintenance activities within the fenced area will be postponed or halted until young have left the nest. The biologist shall serve as a monitor during those periods when disturbance activities will occur near active nest areas to ensure that no inadvertent impacts to these nests will occur. If avoidance is not possible, a qualified biologist shall relocate nests off site, to be spaced no closer than 100 feet apart. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits (BIO-58).

D-4 Thirty days prior to maintenance activities in suitable habitat, a qualified biologist shall conduct a survey, within the proposed disturbance zone and within 200 feet of the disturbance zone, for San Diego black-tailed jackrabbit. If San Diego black-tailed jackrabbits are present, non-breeding rabbits shall be flushed from areas to be disturbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged and ground-disturbing activities avoided within a minimum of 200 feet during the pup rearing season. This buffer may be reduced based on the location of the den upon consultation with the CDFG. Occupied maternity dens, depressions, nests, or burrows shall be flagged for avoidance and a biological monitor shall be present during maintenance activities. Unattended young shall be relocated to suitable habitat by a qualified biologist. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits (BIO-58).

D-5 Prior to initiating maintenance of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other maintenance activities, all maintenance sites and access roads within the riverbed as well as all riverbed areas within 300 feet of maintenance sites and access roads shall be surveyed at the appropriate season for two-striped garter snake and south coast garter snake. Focused surveys shall consist of a minimum of four daytime surveys, to be completed between April 1 and September 1. The survey schedule may be adjusted in consultation with CDFG to reflect the existing weather or stream conditions. If located, the species will be relocated to suitable pre-approved locations identified in the two-striped garter snake and/or south coast garter snake Relocation Plan. The applicant shall develop a Plan to address the relocation of two-striped garter snake and south coast garter snake. The Plan shall include but not be limited to the timing and location of the surveys that would be conducted for each species, identify the locations where more intensive efforts should be conducted,

identify the habitat and conditions in the proposed relocation site(s), identify the methods that would be utilized for trapping and relocating the individual species, and provide for the documentation/recordation of the species and number of animals relocated. The Plan shall be submitted to CDFG for approval 60 days prior to any ground-disturbing activities, within potentially occupied habitat.

The qualified biologist shall be present during all activities immediately adjacent to or within habitat that supports populations of two-striped garter snake and/or south coast garter snake. Clearance surveys for garter snakes shall be conducted within 200 feet of potential habitat by the authorized biologist prior to the initiation of maintenance each day. The resume of the proposed biologists will be provided to CDFG for approval prior to conducting the surveys (BIO-89).

D-6 No earlier than 30 days prior to the commencement of maintenance activities, a pre-construction survey shall be conducted by a qualified biologist to determine if active roosts of bats (special-status and common species) are present on or within 300 feet of the Project disturbance boundaries. Should an active maternity roost be identified (in California, the breeding season of native bat species is generally from April 1 through August 31), the roost shall not be disturbed and maintenance within 300 feet shall be postponed or halted, until the roost is vacated and juveniles have fledged. Surveys shall include rocky outcrops, caves, structures, and large trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). Trees and rocky outcrops shall be surveyed by a qualified bat biologist (*i.e.*, a biologist holding a CDFG collection permit and a Memorandum of Understanding with CDFG allowing the biologist to handle bats). If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (*i.e.*, not removed) by the Project. If avoidance of the maternity roost must occur, the bat biologist shall survey (through the use of radio telemetry or other CDFG approved methods) for nearby alternative maternity colony sites. If the bat biologist determines in consultation with and with the approval of CDFG that there are alternative roost sites used by the maternity colony and young are not present then no further action is required.

If a maternity roost will be impacted by the Project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the Project site no less than three months prior to the eviction of the colony. Large concrete walls (*e.g.*, on bridges) on south or southwestern slopes that are retrofitted with slots and cavities are an example of structures that may provide alternative potential roosting habitat appropriate for maternity colonies. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. CDFG shall also be notified of any hibernacula or active nurseries within the maintenance zone (BIO-61).

If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (*e.g.*, installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost because bats do not typically leave their roost daily during winter months in southern coastal California. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist in consultation with CDFG shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (*i.e.,* there shall be no less or more than one night between initial disturbance and the grading or tree removal). These actions should allow bats to leave during nighttime hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight.

If an active maternity roost is located on the Project site, and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (*i.e.*, prior to March 1) or after young are flying (*i.e.*, after July 31) using the exclusion techniques described above (BIO-61).

D-7 Pre-construction surveys for San Emigdio blue butterfly shall occur in all areas containing host plants in sufficient density to support this species. A qualified Lepidoptera biologist shall conduct focused surveys at a time of year and during weather conditions when the detection of eggs, larvae, or adults is possible. All occupied habitat shall be mapped and the locations provided to CDFG. Should the removal of quail brush or other documented host plants from occupied San Emigdio blue butterfly habitat in Potrero Canyon or other areas be required, the plants shall be removed when eggs and larvae are not present (*i.e.*, mid-September to March). Removal of quail brush plants from the documented habitat in Potrero Canyon may only be conducted from April through early September if it is determined by a qualified biologist that eggs and/or larvae are not present on the plants to be removed (BIO-65).

2.1.5 Invasive Species Control

E-1 As the features constructed to treat and control stormwater and non-stormwater runoff often include permanent pools of water or hydraulic and soil conditions conducive to infestation by non-native species (both plant and animal), the following mitigation measures have been developed to establish criteria and methods to prevent or eradicate such species.

E-2 Monitoring of storm-water height at Dry Basins:

a. If standing water more than 6 inches in depth is found within any of the ponds during the summer months, measures should be implemented to change the outlet from the pond to assure continual draining and to allow the floor to dry for a period of at least six weeks.

b. The purpose of this maintenance action is to eradicate non-native frog species and mosquitoes within the pond, while allowing the pond to function as intended.

c. Alternatively, the ponds may be pumped and inflow diverted for 6 weeks during the summer to accomplish this same goal. Water removed from the pond facilities for maintenance may be spread in open space areas that have been approved by DFG or trucked to an approved water disposal site.

d. This does not apply to Wet Ponds, Lakes, or other features where a permanent wetted pool is a function of the design. Other methods shall be employed in the event of an infestation.

E-3 Invasive vegetation, such as giant reed, castor bean, Pampas grass, and tamarisk must be removed. Invasive species should never contribute more than 25% of the vegetated area of the basin or feature. For more information on invasive weeds, including biology and control of listed weeds, refer to the encyclopedia located at the California Department of Food and Agriculture website (http://www.cdfa.ca.gov/wma) and the California Invasive Plant Council website (http://portal.cal-ipc.org/weedlist).

a. The Permittee shall remove any non-native vegetation (e.g., tree tobacco, castor bean, giant cane) from the maintenance work area and shall dispose of it in a manner and a location which prevents its reestablishment.

b. Removal shall be done at least twice annually during the spring/summer season, as needed.

i. Giant cane, if present, shall be cut to a height of 6 inches or less, and the stumps painted with an herbicide approved for aquatic use within 5 minutes of cutting.

ii. Herbicides shall be applied at least three times during the period from May 1 to October 1 to eradicate these plants.

c. Where proposed methods for removing giant cane deviate from this procedure, the Permittee shall present the alternate methods, in writing, to the Department for review and approval, prior to maintenance.

d. Whenever possible, invasive species shall be removed by hand or by hand-operated power tools, rather than by chemical means.

e. If there is a possibility that the herbicides could come into contact with water, the Permittee shall employ only those herbicides, such as Rodeo (Glyphosate), which are approved for aquatic use. If surfactants are required, they shall be restricted to non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use.

f. The Permittee shall apply any herbicides/pesticides in accordance with state and federal law.

   i. No herbicides/pesticides shall be used where threatened or endangered species occur.

   ii. No herbicides/pesticides shall be used when wind velocities are above 5 miles per hour.

   iii. No herbicides/pesticides shall be used on native vegetation unless specifically authorized, in writing, by the Department.

E-4 Any temporary erosion control features, such as straw bales, should be free of invasive weed species. All erosion control fabric, straw bales, or other features should be removed at the end of the maintenance activity. Straw bales should not be used in wetted areas where sensitive fish require the soil for any portion of their life cycles.

E-5 At the completion of maintenance activities (no later than April 1 of the year following maintenance activity) a maintenance completion report shall be submitted to CDFG, the Corps and the Los Angeles Regional Water Quality Control Board. The report shall include the dates of maintenance, a description of the maintenance area, description of maintenance completed, summary of pre-maintenance biological surveys, summary of biological monitoring completed during maintenance activity, photo documentation of completed maintenance activity, and whether any special status plant or animal species were encountered, and if so, details of their relocation or exclusion from the work area.

2.2 Feature-Specific Measures

2.2.1 Channel Clearing Near Bridges

FS-A1 Vegetation and/or debris will be removed on an as-needed basis, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, as determined by Permittee from the bridges listed below. Vegetation and debris may be removed by heavy equipment. Equipment within the river shall be operated within the above-described removal areas which shall be demarcated with temporary fencing or staking:

A. Commerce Center Bridge: no clearing required

B. Hwy 126 Bridge over Castaic Creek: 25 feet upstream, 25 feet downstream, 420-foot-wide bridge

C. Hwy 126 Bridge/Culvert & bike trail over Chiquito Canyon Creek: 25 feet upstream & 25 feet downstream along 100-foot-wide bridge; and Sediment removal to maintain minimum vertical clearance beneath roadway

D. Hwy 126 Culvert & bike trail over San Martinez Grande Canyon Creek: 25 feet upstream & 25 feet downstream along 100-foot-wide bridge; and Sediment removal to maintain minimum vertical clearance beneath roadway

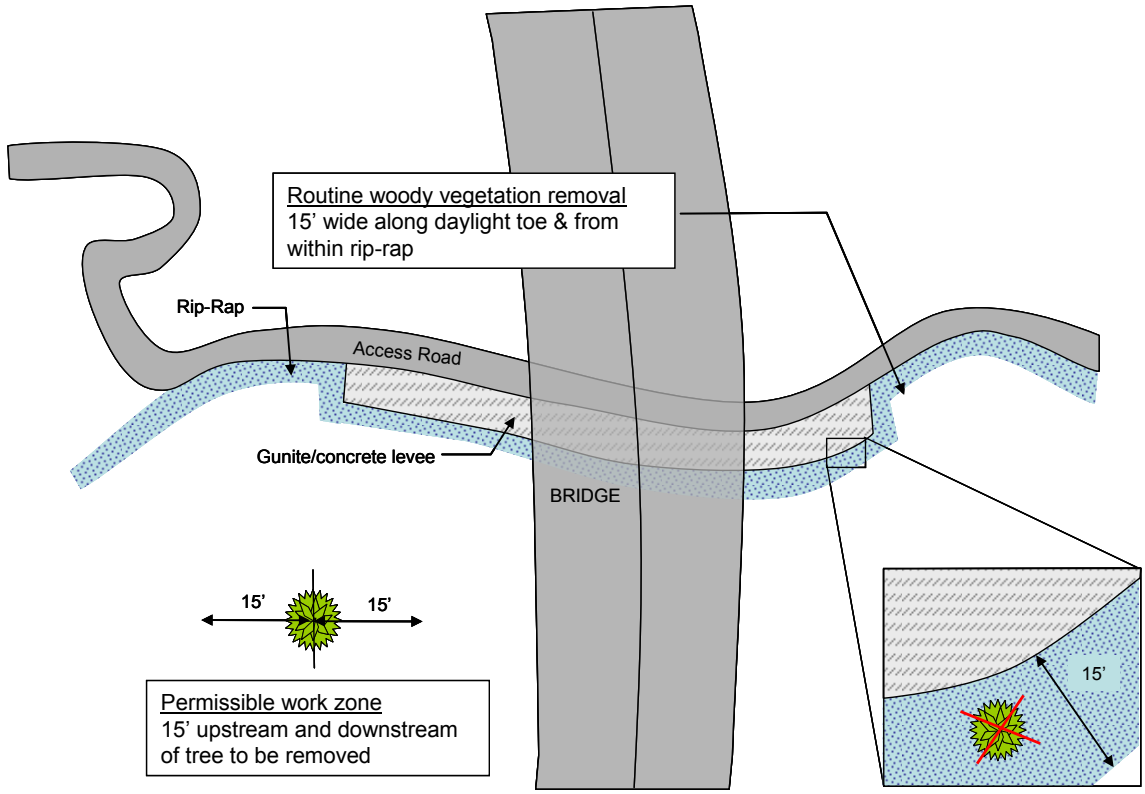
E. Long Canyon Bridge: no clearing required

F. Potrero Canyon Bridge: no clearing required

2.2.2 Removal of Vegetation from Rip-Rap

FS-B1 For new ungrouted rip-rap, grouted rip-rap, and concrete lining constructed along the Santa Clara River under the 404 permit and 1605 Agreement (typical limited to storm drain outlets and bridge locations), Permittee may remove trees that grow in levees, and may remove large trees, defined as trees with trunks 4 inches in diameter at breast height (dbh), within 15 feet of the levee toe in order to maintain the structural integrity of the levees, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4,. Whenever possible this work shall be performed from the levee access road. If access to the bottom of the river is required, the work area shall be limited to a 30-foot-wide zone extending outward from the levee at the invert and 15 feet upstream and downstream on either side of the tree to be removed. Hand held equipment shall be used.

Vegetation Removal from Rip-Rap



FS-B2 For new rip-rap constructed as a component of a drop structure, stormwater quality or flow attenuation basin, storm drain inlet or outlet, or other management system, where, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, growth will impede the proper function of the rip-rap, Permittee may remove trees that grow in the structure, and may remove large trees, defined as trees with trunks 4 inches in diameter at breast height (dbh), within 15 feet of the exposed rip-rap structure to maintain the structural integrity of the structure. Where vegetation is specifically designed to be integral to the rip-rap structure, then such maintenance will not be performed. See specific facilities below for further details.

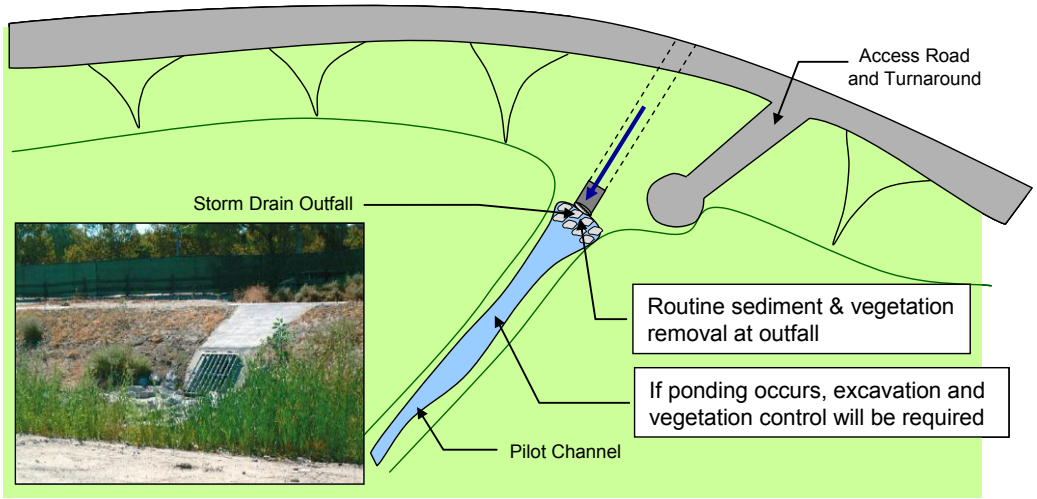
2.2.3 Cleaning Storm Drain Outfalls

FS-C1 Sediment buildup at existing storm drain outfalls shall be removed on an as needed basis as determined by the Permittee. The County shall use light equipment to create a swale up to 75 feet long and 10 feet wide, to allow water to drain. Equipment such as a Caterpillar D-8 or equivalent may enter areas of the river as long as they avoid areas of ponded or flowing water (not including water discharging from the storm drain) to remove sediment. Large riparian trees defined as trees with trunks in excess of four

inches in diameter at breast height (dbh) shall be avoided. The maintenance area shall be demarcated with flagging. New storm drain outfalls shall be designed with a rock apron to maintain a clear area large enough to provide hydraulic capacity to maintain flow from the storm drain. Equipment shall be introduced into the river by means of an earth ramp constructed on the sideslope in the immediate vicinity, or from an adjacent invert access ramp if within 1,000 feet of the area to be maintained. If the equipment must access the riverbed, care will be taken to minimize impacts to vegetation and to avoid destruction of large trees, defined as trees with trunks in excess of four inches in diameter.

FS-C2 In order to drain stagnant water that is causing an odor problem at any outfall, the Permittee may dig a swale using a Caterpillar D-6 or its equivalent or may hand shovel a swale, up to 75 feet long and 10 feet wide to allow standing water to percolate. The Permittee shall notify the Corps and CDFG prior to performing this work. The procedures described to identify and relocate endangered species from live streams and ponded water shall be followed.

Storm Drain Outfall



2.2.4 Bridge Repair

FS-D1 Whenever practical, repairs to bridges shall be made from the bridge deck. If this is not practical, minimum encroachment upstream and/or downstream of the bridge will be acceptable. The maintenance work area for structural repairs shall be limited to 30 feet on either side of the bridge and under the bridge itself. Equipment shall be introduced into the river by means of an earth ramp constructed on the sideslope in the immediate vicinity, or from an adjacent invert access ramp if within 1,000 feet of the bridge. If the equipment must access the riverbed, care shall be taken to minimize impacts to

vegetation and to avoid destruction of large trees, defined as trees with trunks in excess of four inches in diameter at breast height (dbh). Best management practices shall be employed during the bridge repair work to prevent pollutants from being discharged to the stream channel.

2.2.5 Repairs to Bank Stabilization

FS-E1 Structural repairs to levees, storm drain outfalls, water quality facilities, utility crossings, etc. shall be performed on an as-needed basis to maintain the integrity of the structures. The work area shall be limited to the section of the structure, plus a 30-foot work area extending out from the levee at the invert and upstream and downstream within the 30-foot width of the structure to be repaired. Best management practices shall be employed during the repair work to prevent pollutants from being discharged to a stream channel.

2.2.6 Water Quality Treatment and Flow Attenuation Facilities

FS-F1 Water quality treatment and flow attenuation facilities (basins, swales, and filters) are installed outside of the river or creek bed. These facilities may be planted with native wetland plants and may include permanent open water features. The water quality treatment and flow attenuation facilities shall be maintained on a regular basis to ensure proper function while also paying strict attention to prevention and abatement of nuisance conditions. Depending on the extent that any such feature supports special-status riparian or other nesting bird species, maintenance of these facilities is recommended to occur between August 15st and March 15th. The additional survey requirements discussed previously may be conducted to work outside of this period where work is required in areas that support nesting of special-status species. These features are further discussed below with specific activities applicable to each.

2.2.6.1 Extended Detention Basin

FS-G1 **Description—**Extended detention basins (EDBs) store stormwater runoff for sufficient periods of time to promote the removal of pollutants primarily through sedimentation. EDBs are designed with outlets that detain the runoff volume from the water quality design storm for some minimum time (in this case 48 hours) to allow particulates and associated pollutants to settle out. These basins are not designed or anticipated to contain standing water for periods in excess of 48 hours. The EDBs will also incorporate a series of gravel-filled subsurface flow trenches that will provide water quality treatment and facilitate evapotranspiration and percolation of dry weather flows and small storm events within the basin footprint. In addition, a specially constructed dry well that will support deep subsurface percolation of dry weather flows that may exceed the capacity of the gravel trenches will be provided. EDBs are constructed

outside of jurisdictional areas, although if abandoned, or otherwise not properly maintained, native riparian habitats may develop.

FS-G2 **EDB Basin Vegetation—**Vegetation provides erosion protection from both wind and water and biofiltration of stormwater. Intended basin vegetation includes:

A. The bottom and slopes of the extended detention basin shall be vegetated. Where located in CDFG jurisdiction, only appropriate native plants are allowed. In all areas, including non-jurisdictional areas, invasive species shall not be used. This includes plants listed on either the California Department of Food and Agriculture website (http://www.cdfa.ca.gov/wma) or the California Invasive Plant Council website (http://portal.cal-ipc.org/weedlist).

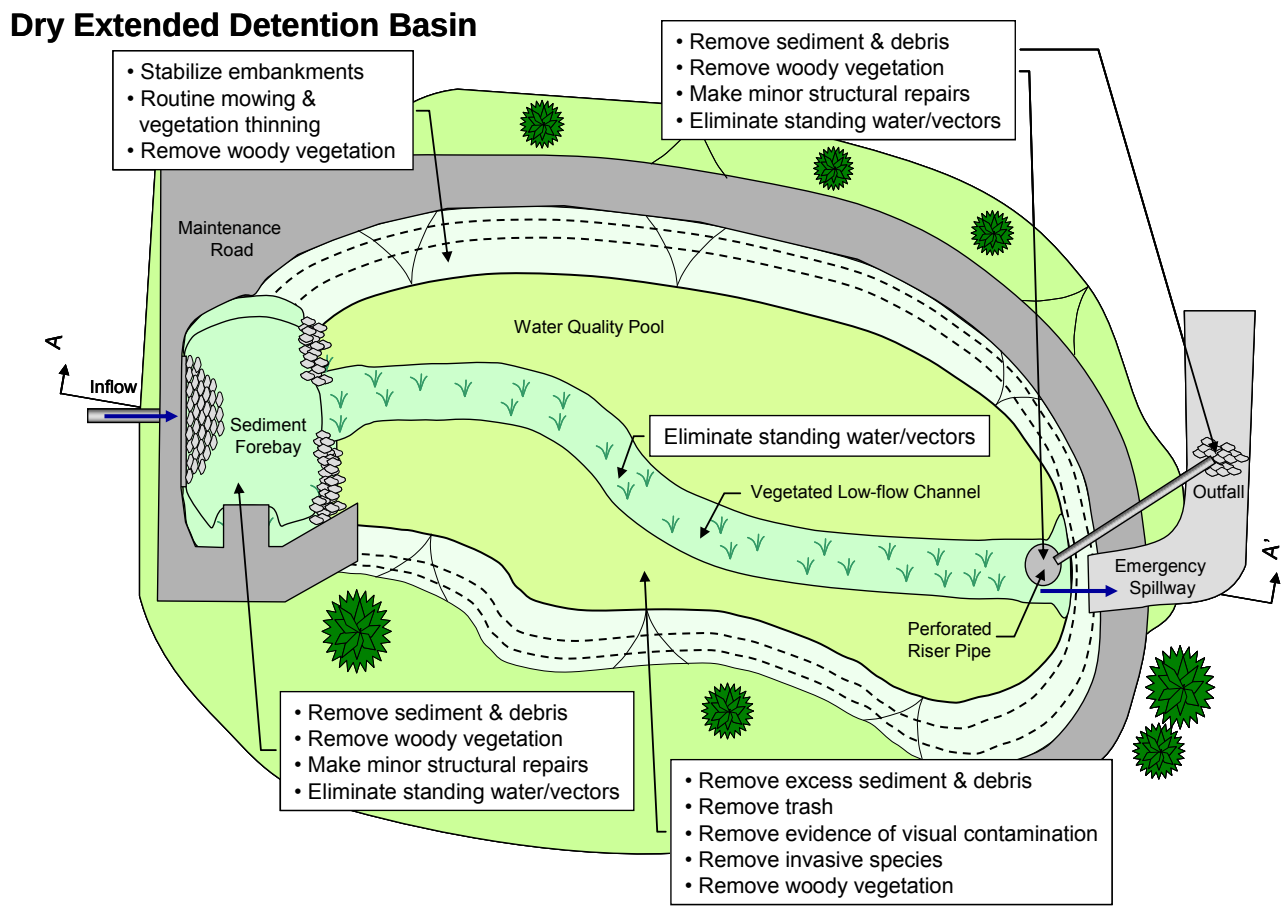
B. The basin bottom should not be planted with trees, shrubs, or other large woody plants that may interfere with sediment removal activities.

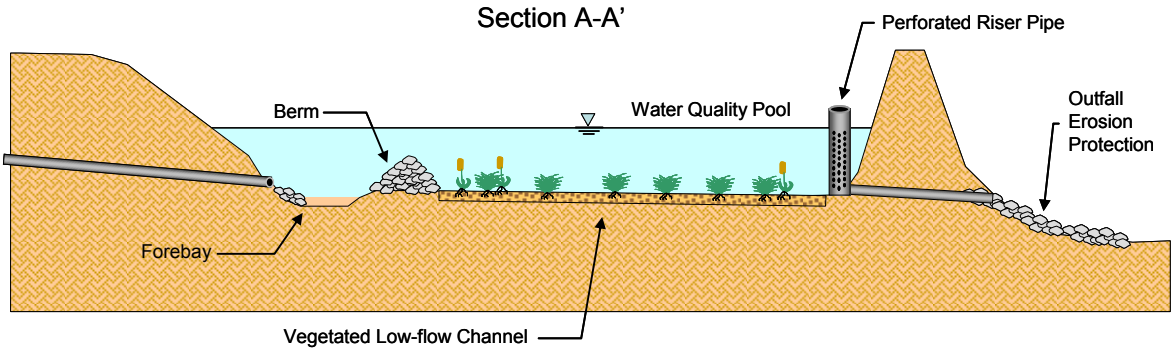
C. Only native perennial grasses, forbs, or similar vegetation that can be replaced via seeding should be used on the basin bottom

FS-G3 **EDB Basin Maintenance Access**—Maintenance access road(s) shall be provided for and maintained to the control structure and other drainage structures associated with the basin.

A. An access ramp should extend to the basin bottom to avoid damage to vegetation planted on the basin slope.

B. Access roads may terminate with a maintained turn around areas of 40 feet by 40 feet.





FS-G4 **EDB Basin General Requirements**—Maintenance is of primary importance if extended detention basins are to continue to function as originally designed. A specific maintenance plan shall be formulated for each facility outlining the schedule and scope of maintenance operations, as well as the data handling and reporting requirements. The following are general maintenance requirements:

A. The basin should be inspected annually prior to the wet season and after major storm events (>0.75 in/24 hours) if spot checks of some basins indicated widespread damage/maintenance needs.

B. Trash and debris should be removed as needed, but at least annually prior to the beginning of the wet season.

C. Site vegetation should be maintained as follows:

1. Vegetation, large shrubs, or trees that limit access or interfere with basin operation should be pruned or removed, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, and where feasible, outside the bird nesting season.
2. Slope areas that have become bare should be revegetated and eroded areas should be regraded prior to being revegetated.
3. Grass should be mowed to 4 to 9 inches high, and grass clippings should be removed.
4. Fallen leaves and debris from deciduous plant foliage should be raked and removed.
5. Invasive vegetation must be removed and replaced with noninvasive species. Invasive species should never contribute more than 25% of the vegetated area (5% if located in CDFG jurisdiction).
6. Dead vegetation should be removed if it exceeds 10% of area coverage. Vegetation should be replaced immediately to maintain cover density and control erosion where soils are exposed.
7. No herbicides or other chemicals shall be used to control vegetation.

D. Sediment buildup exceeding 50% of the forebay capacity should be removed.

E. Sediment from the remainder of the basin should be removed when 6 inches of sediment accumulates.

F. Sediments should be tested for toxic substance accumulation in compliance with current disposal requirements if land uses in the catchment include commercial or industrial zones, or if visual or olfactory indications of pollution are noticed.

G. Following sediment removal activities, replanting and/or reseeding of vegetation may be required for reestablishment.

2.2.6.2 Vegetated Swales

FS-H1 **Description**—Vegetated swales are open, shallow channels with low-lying vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. Vegetated swales provide pollutant removal through settling and filtration in the vegetation (usually grasses) lining the channels, provide the opportunity for volume reduction through infiltration and evapotranspiration, and reduce the flow velocity in addition to conveying stormwater runoff. An effective vegetated swale achieves uniform sheet flow over and through a densely vegetated area for a period of several minutes. Swales that are integrated within a project may use turf or other more intensive landscaping, while swales that are located on the project perimeter, within a park, or close to an open space area may be planted with a more naturalistic plant palette.

FS-H2 **Swales Vegetation**—Swales must be vegetated in order to provide adequate treatment of runoff. It is important to maximize water contact with the vegetation and the soil surface. Intended swale vegetation includes:

A. Mix of erosion-resistant plant species that effectively bind the soil.

B. A diverse selection of low growing plants that thrive under the specific site, climatic, and watering conditions should be specified.

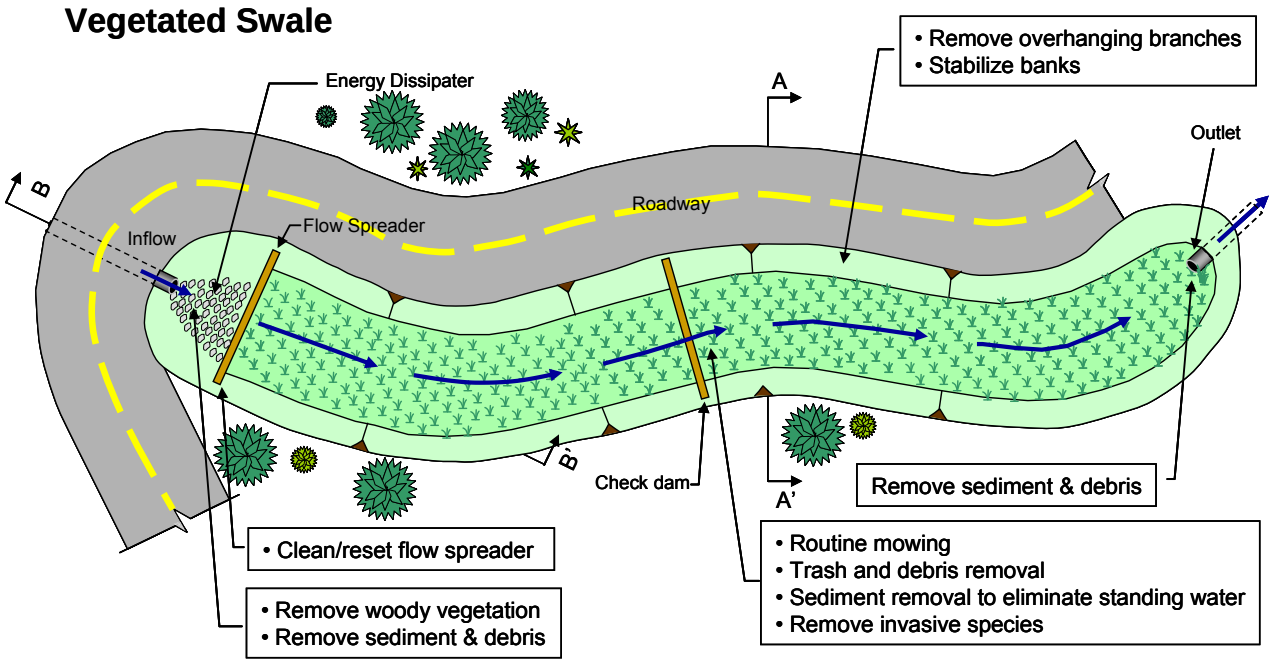
C. A mixture of dry-area and wet-area grass species that can continue to grow through silt deposits is most effective.

D. Drought-tolerant grasses should be specified to minimize irrigation requirements.

FS-H3 **Swales Maintenance Access—**A maintenance access road may or may not be incorporated into a swale design. A suitable location for an access road may exist at the inlet or outlet. Along the length of the swale, access will be dependent upon adjacent land uses: paved roadways; parking lots; bike paths; park or open space; or otherwise developed areas.

APPENDIX A
RMDP MAINTENANCE MANUAL

Vegetated Swale



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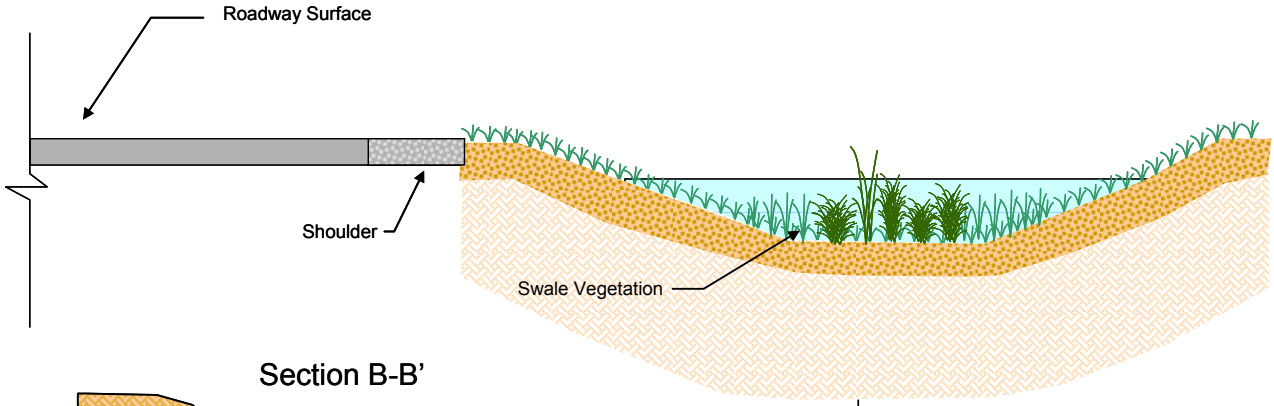

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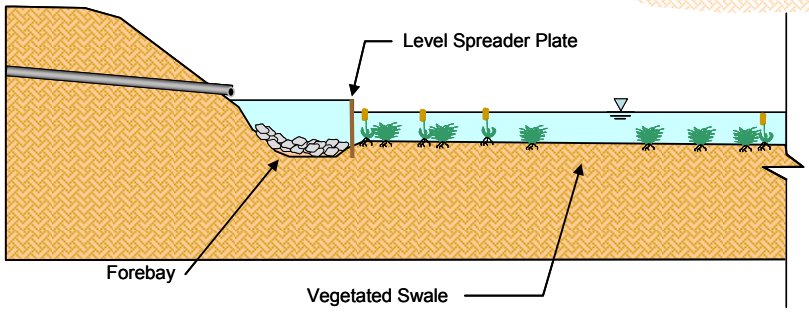


FS-H4 **Swales General Requirements**

A. Inspect vegetated swales for erosion or damage to vegetation after every storm greater than 0.75 inch for on-line swales, if spot checks of some swales indicated widespread damage/maintenance needs, and at least twice annually for off-line swales.

B. Each swale should be checked for debris and litter and areas of sediment accumulation.

C. Swale inlets (curb cuts or pipes) should maintain a calm flow of water entering the swale. Remove sediment as needed at the inlet if vegetation growth is inhibited in greater than 10% of the swale or if the sediment is blocking even distribution and entry of the water.

D. Flow spreaders should provide even dispersion of flows across the swale. Sediment and debris should be removed from the flow spreader if blocking flows. Splash pads should be repaired if needed to prevent erosion. Spreader level should be checked and re-leveled if necessary.

E. Side slopes should be maintained to prevent erosion that introduces sediment into the swale.

F. Slopes should be stabilized and planted using appropriate erosion control measures when native soil is exposed or erosion channels are forming.

G. Swales should drain within 48 hours of the end of a storm. Till the swale if compaction or clogging occurs. The perforated underdrain pipe, if present, should be cleaned if necessary.

H. Vegetation should be healthy and dense enough to provide filtering while protecting underlying soils from erosion:

1. Vegetation, large shrubs or trees that interfere with landscape swale operation should be pruned, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4.
2. Fallen leaves and debris from deciduous plant foliage should be removed.
3. Grassy swales should be mowed to keep grass 4 to 6 inches in height.

4. Invasive vegetation must be removed and replaced with noninvasive species. Invasive species should never contribute more than 25% of the vegetated area (5% if located in CDFG jurisdiction).

I. Check dams (if present) should control and distribute flow across the swale. Causes for altered water flow and/or channelization should be identified and obstructions cleared. Check dams and swale should be repaired if damaged.

J. Trash and debris, sediment, visual contamination (e.g., oils), noxious or nuisance weeds, should all be removed.

2.2.6.3 Infiltration Facilities

FS-I1 **Description**—Infiltration facilities include infiltration basins and infiltration trenches. In general, infiltration facilities are similar to stormwater detention systems but are constructed with a highly permeable base that is specifically designed to infiltrate runoff. It is usually not practical to infiltrate runoff at the same rate that it is generated; therefore, these facilities generally include both a storage component and a drainage component.

A. Infiltration Basins are usually shallow with flat, vegetated bottoms and side slopes and can be incised by excavating a depression below the existing grade or constructed above grade by constructing a perimeter berm.

B. Infiltration Trenches are long, narrow, rock-filled trenches that receive stormwater runoff from small drainage areas. These facilities may include a shallow depression at the surface, but the majority of runoff is stored in the void space between the stones and infiltrates through the sides and bottom of the trench.

C. Infiltration facilities are ideal for hydromodification control, where surface runoff volume reductions are desired. Infiltration facilities are also good candidates for the removal of sediment, particulate bound pollutants, and bacteria. The primary pollutant removal processes in infiltration facilities include volume and associated pollutant load reduction, sedimentation, filtration, and adsorption.

FS-I2 **Infiltration Vegetation**

A. Infiltration Basin

1. A thick mat of drought tolerant grass should be established on the basin floor and sideslopes. Grass may need to be irrigated during establishment.

B. Infiltration Trench

1. Infiltration trenches shall be kept free of vegetation. Trees and other large vegetation should be planted away from trenches such that drip lines do not overhang infiltration beds, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4.

FS-I3 **Infiltration Maintenance Access**

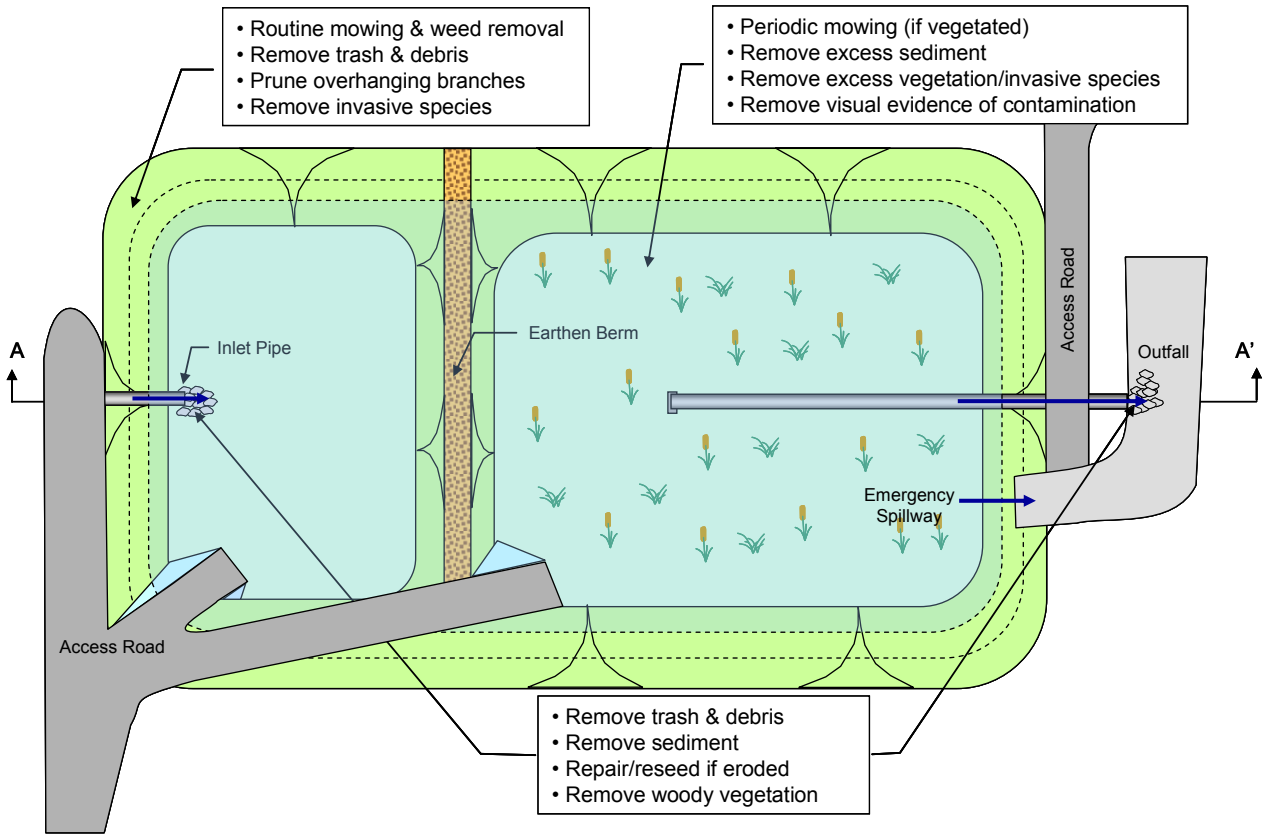
A. Infiltration Basin—require access provisions similar to EDBs. Maintenance access road(s) shall be maintained to the control structure and other drainage structures associated with the basin (e.g., inlet, emergency overflow or bypass structures).

1. An access ramp should extend to the basin bottom to avoid damage to vegetation planted on the basin slope.
2. Access roads may terminate with a maintained turn around areas of 40 feet by 40 feet.

B. Infiltration Trench

1. The facility and outlet structures must all be safely accessible during wet and dry weather conditions.
2. An access road along the entire length of the trench is required unless the trench is located along an existing road or parking lot that can be safely used for maintenance access.
3. If the infiltration facility becomes plugged and fails, then access is needed to excavate the facility to remove and replace the filter bed media, as well as to increase all dimensions of the facility by 2 inches to provide a fresh surface for infiltration. To prevent damage and compaction, access must be able to accommodate a backhoe working at “arms length.”

Infiltration Basin



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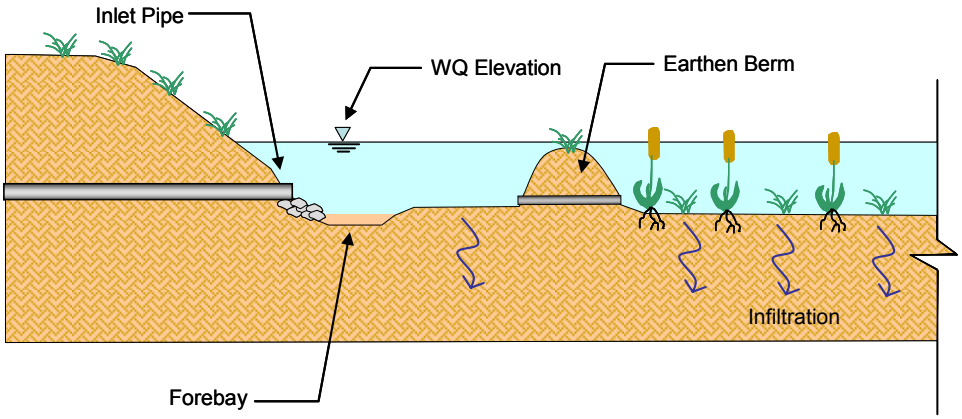
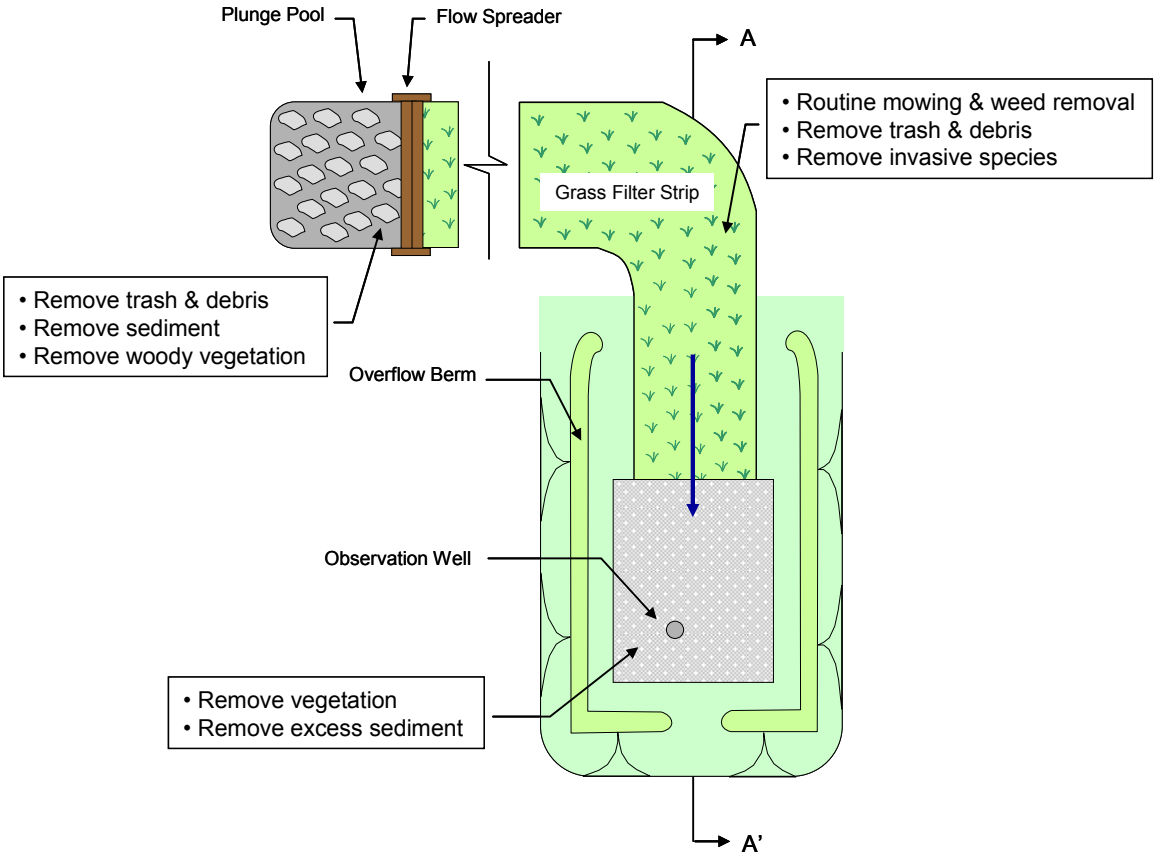


Infiltration Trench



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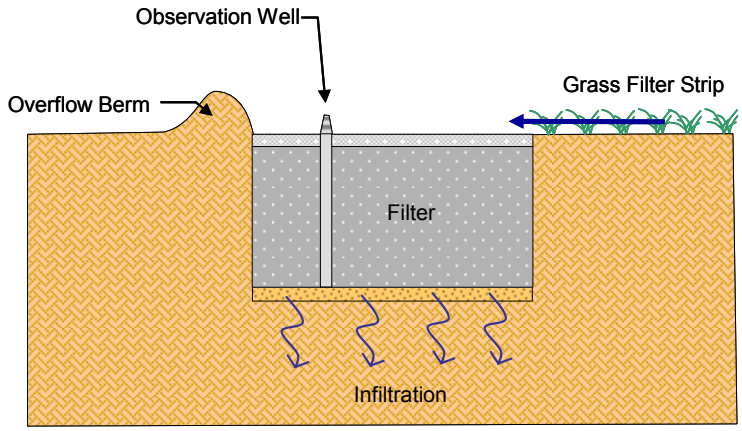


FS-I4 **Infiltration General Requirements—**Infiltration facility maintenance should include frequent inspections to ensure that water infiltrates into the subsurface completely within the recommended infiltration time of 72 hours or less after a storm. A specific maintenance plan shall be formulated specifically for each facility outlining the schedule and scope of maintenance operations, as well as the data handling and reporting requirements. The following are general maintenance requirements:

A. Regular inspection should determine if the sediment removal structures require routine maintenance. Facilities should be inspected at least annually.

B. Maintenance activities triggered by a potentially clogged facility include:

1. Check for debris/sediment accumulation, rake surface and remove sediment (if any) and evaluate potential sources of sediment and debris.
2. For basins, removal of the top layer of native soil may be required to restore infiltrative capacity.
3. For trenches, assess the condition of the top aggregate layer for sediment buildup and crusting. Remove top layer of pea gravel and replace, or if necessary, the entire trench may need to be excavated and replaced.
4. For trenches, if there is a tear in the filter fabric, repair or replace.
5. Any debris or algae growth located on top of the infiltration facility should be removed.

C. Trash and debris should be removed as needed, but at least annually prior to the beginning of the wet season.

D. Site vegetation should be maintained, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, as frequently as necessary to maintain the aesthetic appearance of the site, and as follows:

1. Large shrubs, or trees that limit access or interfere with basin operation, should be pruned or removed.
2. Slope areas that have become bare should be revegetated and eroded areas should be regraded prior to being revegetated.
3. Invasive vegetation must be removed and replaced with noninvasive species. Invasive species should never contribute more than 25% of the vegetated area (5% if located in CDFG jurisdiction).

E. For infiltration basins, sediment buildup exceeding 50% of the forebay capacity should be removed. Sediment from the remainder of the basin should be removed when 6 inches of sediment accumulates.

F. Following sediment removal activities, replanting and/or reseeding of vegetation may be required for reestablishment.

2.2.6.4 Wetponds

FS-J1 **Description**—Wetponds are constructed, naturalistic ponds with a permanent or seasonal pool of water. Aquascape facilities, such as artificial lakes, are a special form of wet pool facility that can incorporate innovative design elements to allow them to function as a stormwater treatment facility in addition to an aesthetic water feature. Wetponds require base flows to exceed or match losses through evaporation and/or infiltration and they must be designed with the outlet positioned and/or operated in such a way as to maintain a permanent pool. The applications for wetponds are similar to those of extended detention (EDB) basins and include peak flow attenuation (with EDB), volume reduction, and pollutant removal. It is acceptable for wetponds to dry out for part of the year.

FS-J2 **Wetpond Vegetation**

A. A stabilization/revegetation plan should be prepared for aquatic, temporarily submerged, areas.

B. If the second cell of the wetpond is 3 feet or shallower, the bottom area shall be planted with emergent wetland vegetation

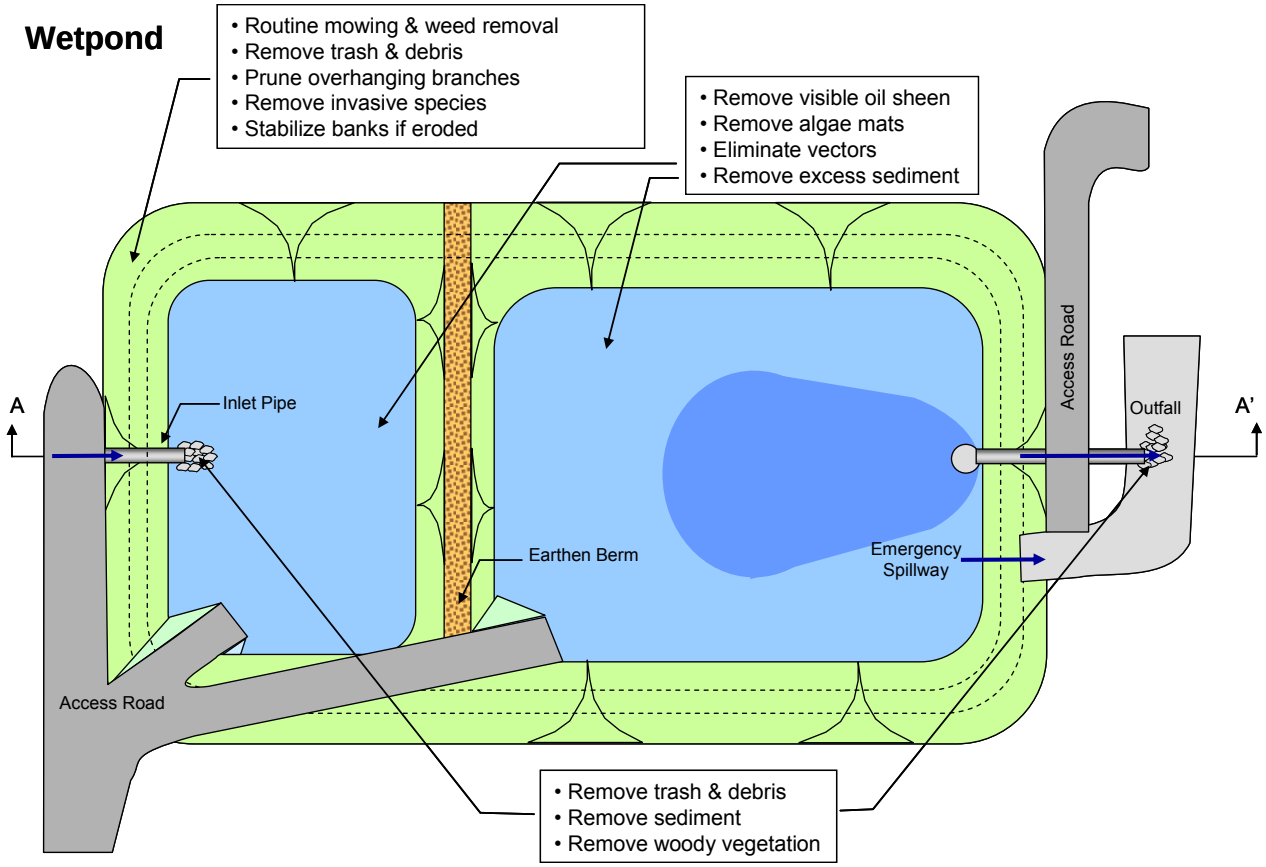
C. Emergent aquatic vegetation shall be planted to cover 25-75% of the area of the permanent pool.

D. Outside of the pond, native, or non-invasive non-native, vegetation adapted for site conditions shall be used in non-irrigated sites.

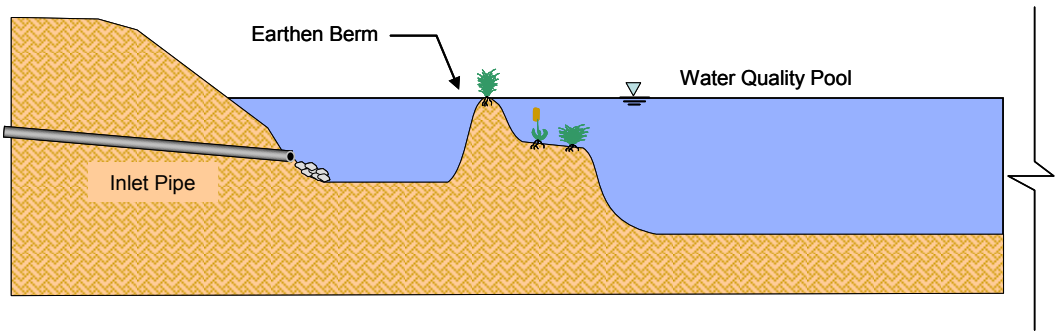
FS-J3 **Wetpond Maintenance Access—**Maintenance access road(s) shall be provided to the control structure and other drainage structures associated with the basin.

A. The access ramp should extend to the basin bottom to avoid damage to vegetation planted on the basin slope.

B. Access roads may terminate with a maintained turn around areas of 40 feet by 40 feet.


Wetpond
• Routine mowing & weed removal
• Remove trash & debris
• Prune overhanging branches
• Remove invasive species
• Stabilize banks if eroded
• Remove visible oil sheen
• Remove algae mats
• Eliminate vectors
• Remove excess sediment
A
A'
Inlet Pipe
Access Road
Outfall
Earthen Berm
Emergency Spillway
Access Road
• Remove trash & debris
• Remove sediment
• Remove woody vegetation

Section A-A'


Earthen Berm
Water Quality Pool
Inlet Pipe

FS-J4 **Design Requirements Specific to Lakes—**Lakes designed to provide treatment may be used for stormwater quality management. A specific maintenance plan shall be formulated for each facility outlining the schedule and scope of maintenance operations, as well as the data handling and reporting requirements. Many of the wetpond design specifications are applicable to lakes, but specific design features are also required:

A. For example, a consistent water supply is required to maintain the wet pool in the lake year around and to flush the system at maximum turn-over of 30-days to reduce the potential for the build-up of salts and nutrients in the lake. Lakes should also have depths greater than 8 feet, and preferably up to 15 feet at the center, to reduce light penetration, maintain a lower average temperature, allow for temperature stratification, and minimize evaporation.

B. Additional design elements specific to lakes to provide stormwater treatment and to maintain the water quality in the lake include wetland planters, biofilter beds, dry weather flow pretreatment, aeration, and stormwater retention. Submerged wetland planters may be constructed on shelves or floating rafts within the lake to assist in promoting overall water quality through filtering.

C. Pretreatment filters also should be provided to treat all dry weather flows prior to entering the lake.

D. Adequate capacity should be provided in the lake to contain a permanent pool, retain the water quality design storm, and provide storage of runoff for irrigation reuse.

FS-J5 **Wetpond General Requirements—**Maintenance is of primary importance if wetponds are to continue to function as originally designed. A specific maintenance plan shall be formulated for each facility outlining the schedule and scope of maintenance operations, as well as the data handling and reporting requirements. The following are general maintenance requirements:

A. The wetpond should be inspected at a minimum annually and after major storm events (>0.75 in/24 hours) if spot checks of some facilities indicated widespread damage/maintenance needs.

B. Trash and debris should be removed as needed, but at least annually prior to the beginning of the wet season.

C. Site vegetation should be maintained, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, as follows:

1. Large shrubs, or trees that limit access or interfere with basin operation, should be pruned or removed.
2. Slope areas that have become bare should be revegetated and eroded areas should be regraded prior to being revegetated.
3. Invasive vegetation must be removed and replaced with noninvasive species. Invasive species should never contribute more than 25% of the vegetated area (5% if located in CDFG jurisdiction).

D. Sediment buildup exceeding 6 inches over the design sediment storage capacity in the first cell should be removed. Sediment from the second pond cell should be removed when 6 inches of sediment accumulates.

E. Following sediment removal activities, replanting and/or reseeding of vegetation may be required for reestablishment.

2.2.6.5 Stormwater Wetland Basins

FS-K1 **Description—**A stormwater wetland basin is a treatment system consisting of a sediment forebay and a permanent micro-pool with aquatic vegetation covering a large portion of the basin. Stormwater wetlands typically include components such as an inlet with energy dissipation, a sediment forebay for settling out coarse solids and to facilitate maintenance, a base with shallow sections (1 to 2 feet deep) planted with emergent vegetation, deeper areas or micro pools (3 to 5 feet deep) , and a water quality outlet structure. The aquatic vegetation and the associated biological unit processes are a fundamental part of stormwater wetland basins.

A. Stormwater wetlands are a treatment BMP designed to capture and treat pollutants to protect receiving waters, including natural wetlands and other ecologically sensitive habitat. The accumulation of pollutants in sediment and vegetation of stormwater wetlands may impact the health of aquatic biota. As such, periodic sediment and vegetation removal within stormwater wetlands may be required. These maintenance activities may further interrupt the use of stormwater wetlands by wildlife.

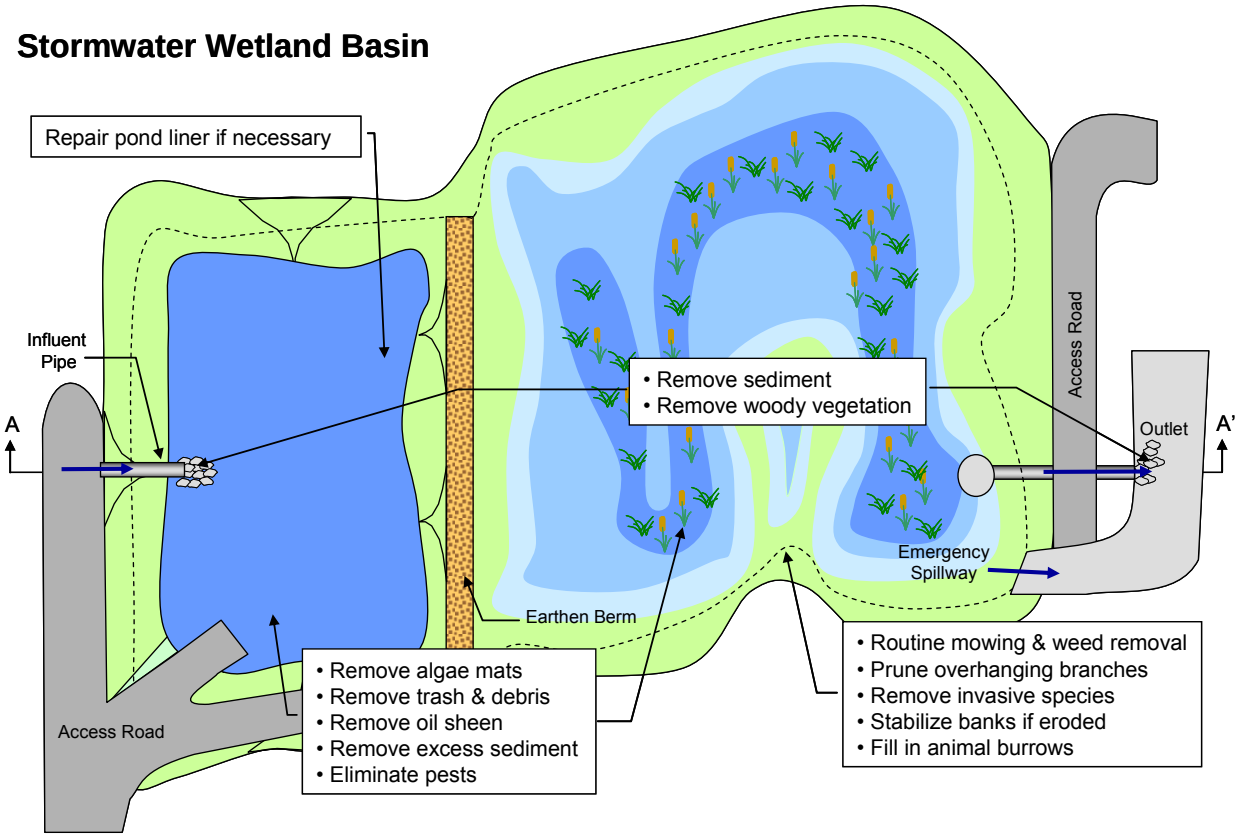
B. The applications for stormwater wetlands are similar to those of wetponds and include peak flow attenuation, volume reduction, and pollutant removal. The pollutant removal processes that occur in wetlands include sedimentation, filtration, plant uptake and storage, and microbially-mediated transformations.

FS-K2 **Wetland Basin Vegetation**—The wetland cell shall be planted with emergent wetland plants following the recommendations of a wetlands specialist.

FS-K3 **Wetland Basin Maintenance Access -** Maintenance access road(s) shall be provided to the control structure and other drainage structures associated with the basin.

A. An access ramp may extend to the basin bottom to avoid damage to vegetation planted on the basin slope.

B. Access roads may terminate with a maintained turn around areas of 40 feet by 40 feet.



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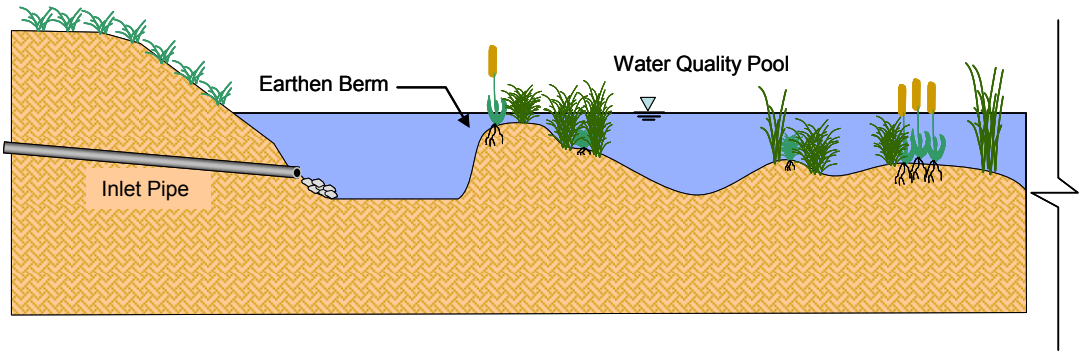


FS-K4 **Wetland Basin General Requirements**—A specific maintenance plan shall be formulated for each facility outlining the schedule and scope of maintenance operations, as well as the data handling and reporting requirements. The following are general maintenance requirements:

A. The stormwater wetland basin should be inspected annually and after major storm events (>0.75 in/24 hours) if spot checks of some basins indicated widespread damage/maintenance needs.

B. Trash and debris should be removed as needed, but at least annually prior to the beginning of the wet season.

C. Site vegetation should be maintained, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, as frequently as necessary to prevent clogging of outlets, creation of dead volumes, and barriers to mosquito fish to access pooled areas, and as follows:

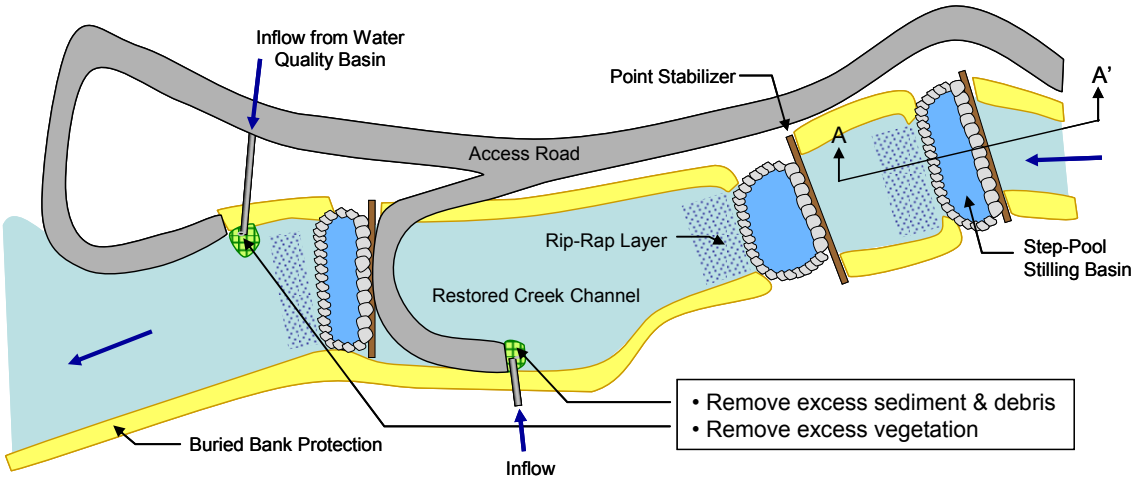
D. Vegetation, large shrubs, or trees that limit access or interfere with basin operation should be pruned or removed, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4. Slope areas that have become bare should be revegetated and eroded areas should be regraded prior to being revegetated. Invasive vegetation must be removed. Invasive species should never contribute more than 25% of the vegetated area (5% if located in CDFG jurisdiction). Dead vegetation should be removed if it exceeds 10% of area coverage. This does not include seasonal die-back where roots would grow back later in colder areas.

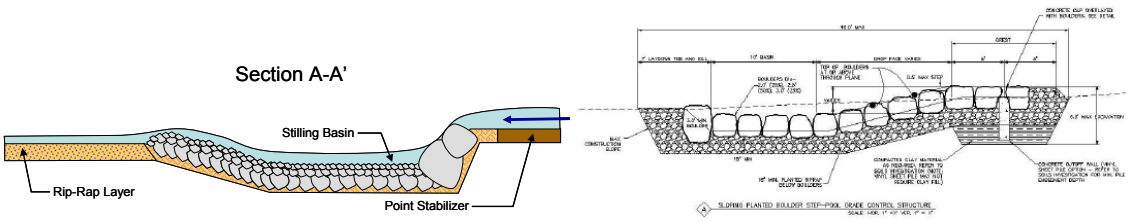
E. Sediment buildup exceeding 6 inches over the storage capacity in the first cell should be removed.

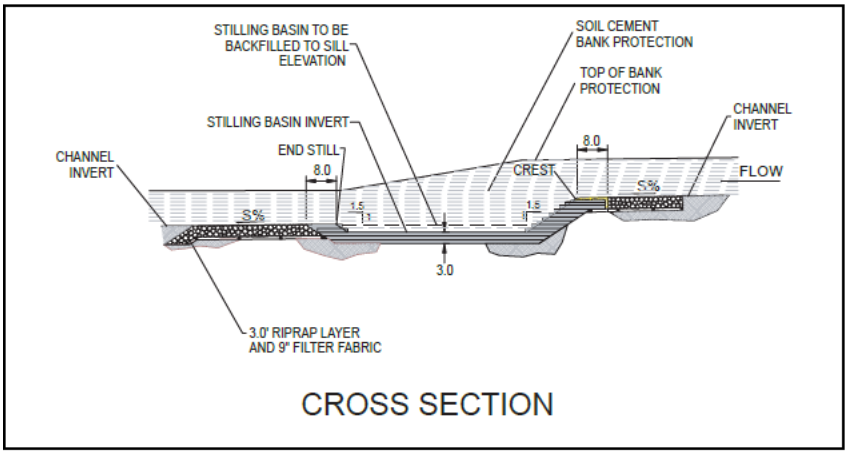
2.2.7 Restored Tributaries

FS-L1 **Description**—The main Tributary drainages (Chiquito, San Martinez Grande, Potrero, Long, and Lion) are intended to have some measure of remaintenance during the development of the NRSP. In some cases the entire drainage will be replaced both horizontally and vertically, while in others, only portions of the drainage will be realigned with minor horizontal and vertical modification by installing grade control structures. The resulting corridors are intended to be functioning native riparian and scrub habitats with stable banks and beds. Subsequent to the establishment of native vegetation in the restored channels/creeks, ongoing maintenance will be minimal. A Geomorphology Monitoring and Management Plan (Plan) will be prepared as part of the Project to ensure that the re-engineered drainages along the major tributaries (Long, Lion, Potrero, Chiquito, and San Martinez Grande Canyons) comply with the mitigation objectives and the design goals outlined in the basis of design. Specifically, the Plan shall detail the measures to be implemented to ensure the integrity of the structural elements and maintenance of the intended state of 'constrained dynamic equilibrium' (*i.e.*, the channels are expected to somewhat change their width, depth and location on the floodplain periodically in response to changing rainfall and vegetation dynamics, but that the channel is expected to pass through all flow structures [e.g., drop structures or step-pools] and that between structures the channel is expected to stay within a predefined corridor and not encroach on infrastructure or fill slopes).

Step-Pool Drop Structures







Conceptual Soil Cement Grade Control Structure Design

FS-L2 **Geomorphology Monitoring and Management Plan (Plan)**—The Plan shall specify the following: (1) a framework to collect baseline data to characterize conditions immediately after maintenance; (2) a post-development monitoring program; (3) a framework to develop threshold parameters and performance standards that activate adaptive management measures across a series of potential future scenarios, including encroachment on infrastructures or excessive infilling of step-pool structures, etc.; and, (4) contingency plans and appropriate remedial measures in the event that management efforts are not successful. The Plan shall be subject to the final approval by the U.S. Army Corps of Engineers, CDFG, and LA DPW prior to maintenance. Specific elements of the plan are further described in measures below.

FS-L3 **Creek Corridor Landscape Maintenance—**the following are anticipated activities, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4:

A. Removal of dead/dying vegetation near trails

B. Trim vegetation impeding on trails or other common areas

C. Fire Break/Weed Abatement Zone Mowing

D. Trail Maintenance (including equestrian trail markers)

FS-L4 **Culverts/Low Bridges**—The accumulation of course-grained sediment within the stilling basins of grade control structures or culverts can reduce the structures ability to provide adequate energy dissipation as well as reduce flow capacity. Excessive vegetative growth may block a culvert resulting in flooding or damage to the structure.

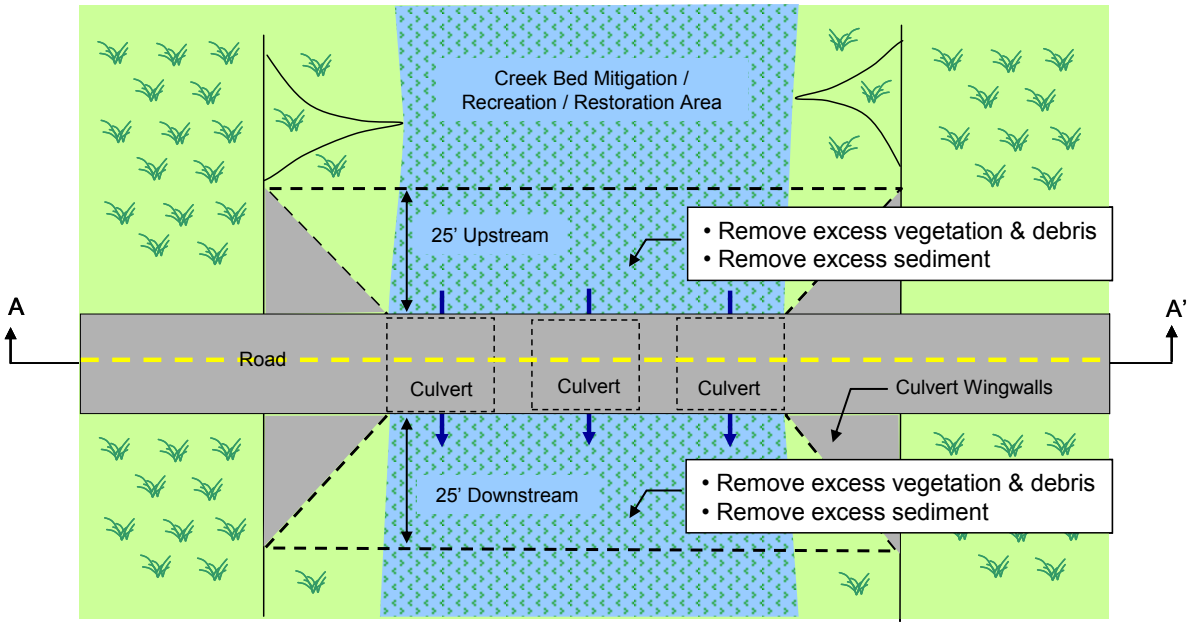
A. Visual inspections are recommended quarterly and after large storm events (> than the 10 year event).

B. Vegetation and/or debris will be removed, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4, on an as-needed basis, as determined by Permittee, from the culverts and bridges listed below:

1. Chiquito Canyon Creek Crossings: 3 locations, 25 feet upstream & 25 feet downstream, 50-foot-wide crossings
2. San Martinez Grande Canyon Creek Crossings: 2 locations, 25 feet upstream, 25 feet downstream, 50-foot-wide crossings
3. Potrero Canyon Creek Crossings: 5 locations, 25 feet upstream, 25 feet downstream, 50-foot-wide crossings
4. Ayers Canyon Creek Crossing: 1 location, 25 feet upstream, 25 feet downstream, 50-foot-wide crossing
5. Long Canyon Creek Crossings: 2 locations, 25 feet upstream, 25 feet downstream, 50-foot-wide crossings
6. Magic Mountain Pkwy Bridge over Long Canyon Creek: No clearing required
7. Lion Canyon Creek Crossing: 1 location, 25 feet upstream, 50-foot-wide crossing
8. Commerce Center Drive over Middle Canyon Drainage: 2 locations, 25 feet upstream, 25 feet downstream, 50-foot-wide crossings

C. Vegetation and debris may be removed by heavy equipment. Equipment shall be operated within areas marked with temporary fencing or staking.

Culvert



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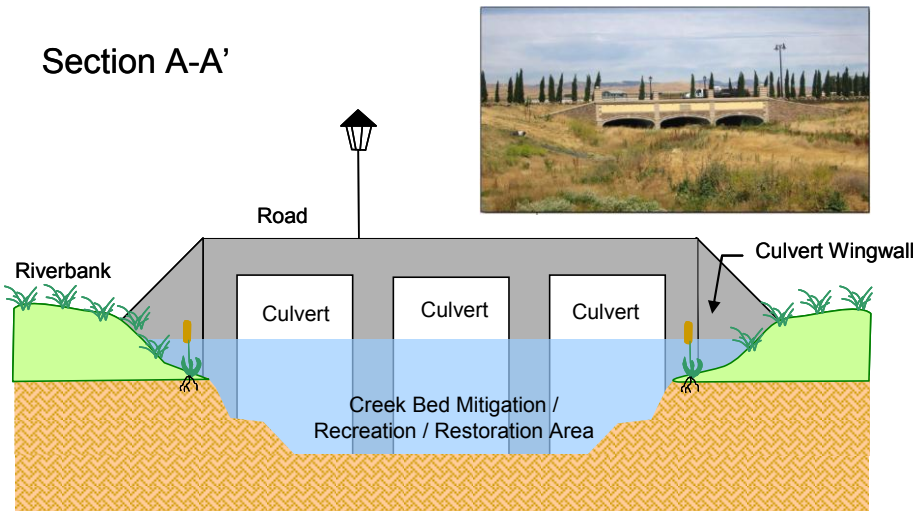


FS-L5 **Grade Control Structures**—are buried vertical structures intended to prevent excessive channel bed erosion and must function pursuant to the intended design. Buried rock, concrete, plastic liners, or other materials may be used to create the vertical boundary. The structure typically extends beyond the wetted bank of the creek into upland areas.

A. Visual inspections are recommended quarterly and after large storm events (> than the 10 year event).

B. Excessive bank erosion attributed to a point stabilizer will require that the structure be exposed and repaired, replaced or augmented as necessary to restore proper function.

C. As these structures generally do not require maintenance and the areas where they will be located will be revegetated with native scrub and riparian habitats, in the event access is required for maintenance, it will be overland, with travel thru native habitats of up to 1,000 feet. Access points will be at the direction of a biologist and will avoid established native vegetation to the extent practicable.

FS-L6 **Drop Structures—**These structures generally include the following components: buried point stabilizer, upstream flow spreader (either hard structure or vegetated strip), rigid armored crest (top), rigid or flexible armored chute, and an energy dissipating splash pool. Materials used to construct these structures may vary and include riprap, soil cement, and concrete. The height from crest to pool may be from 5 feet to 40 feet in vertical elevation change.

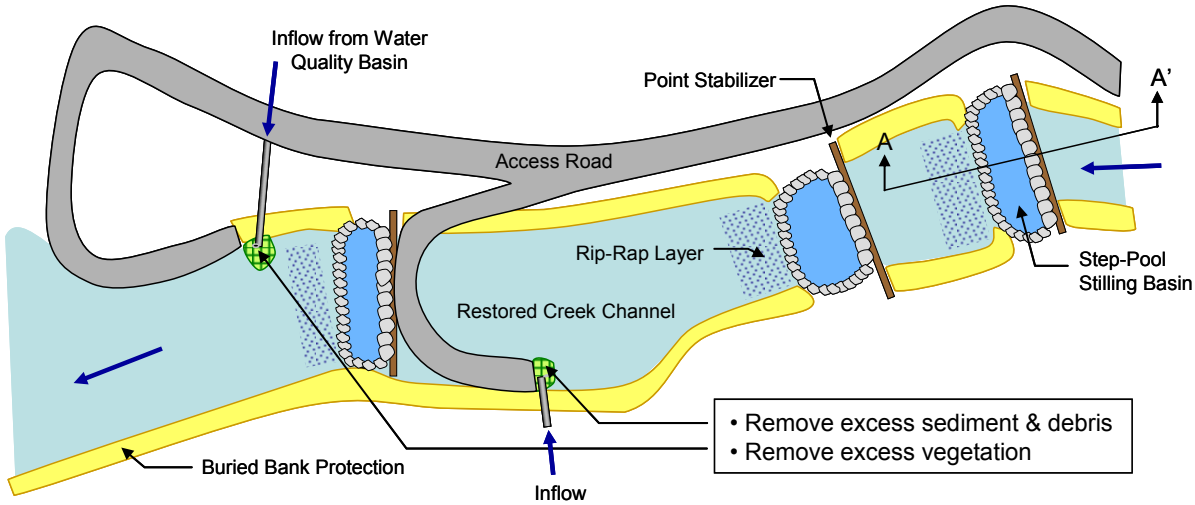
A. Visual inspections are recommended after large storm events (> than the 10 year event).

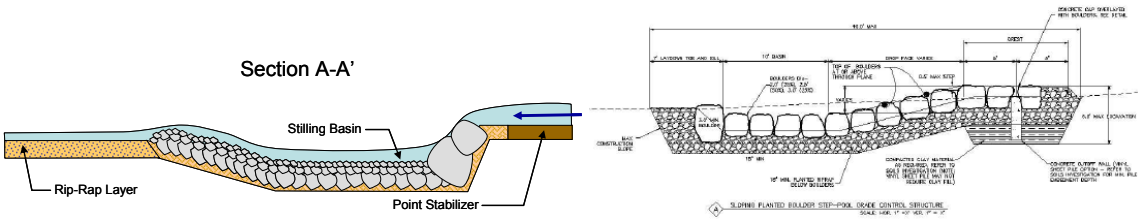
B. The structures are intended to be designed to be self clearing and cleaning, such that vegetation growth should not impede the function of the drop or pool and that sediment buildup is limited to the pool area where it will likely be mobilized in the next storm event.

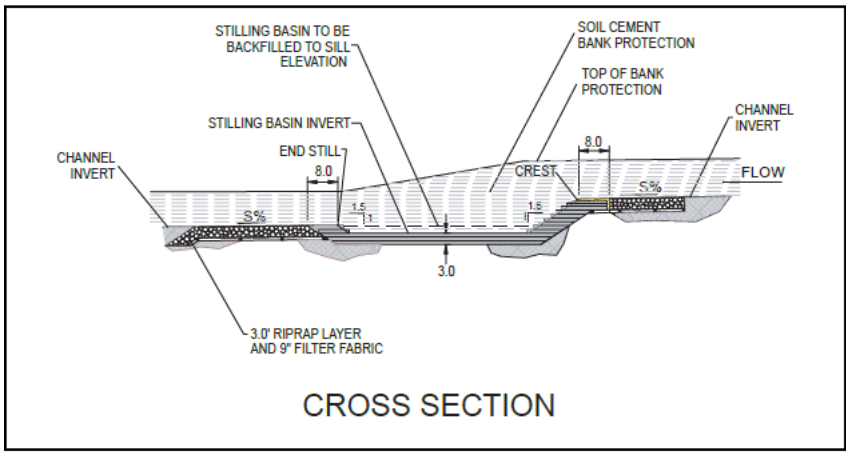
1. In the event vegetative growth threatens the integrity of the crest, chute or splash pool, such vegetation may be hand cut and removed, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4.
2. Sediment is to be removed when accumulation impedes function or causes nuisance conditions.
3. The accumulation of course-grained sediment within the stilling basins of grade control structures or culverts can reduce the structures ability to provide adequate energy dissipation.

C. These features will likely be within reasonable distance of a service road, therefore access will be limited to short distance travel over open scrub habitat, with temporary access impacts of 200 feet × 12 feet wide.

Step-Pool Drop Structures







Conceptual Soil Cement Grade Control Structure Design

FS-L7 **Clearing of Creek Channel and Banks—**General vegetation clearing will not be required within the banks of the Tributaries.

A. Invasive species may require control and methods described in *General* conditions would apply.

B. Clearing of excess sedimentation to enable proper flow characteristics, or to abate nuisance ponding conditions, may be required, subject to nesting bird restrictions described in Section 2.1.2, Condition B-4. In these instances the grade control structures, point stabilizers, and activities in the watershed should be evaluated for the causes of excess sedimentation and measures implemented to correct the problem.

FS-L8 **As-built Status Report and Flood Event Inspections**

A. Immediately after construction the following activities shall be carried out:

1. An as-built survey shall be conducted in accordance with Geomorphology Mitigation Measure GRR-7 from the Newhall Ranch RMDP-SCP EIS/EIR (survey shall include a full longitudinal profile of the channel thalweg (deepest point across the low flow channel), in addition to breaks of slope (top and bottom of low flow channel bank) and all in-channel structures).

2. Also in accordance with GRR-7, channel floodplain and valley toe shall be mapped into three classes of channel migration zone: “green zones” where channel migration is permissible, “yellow zones” which should trigger site inspections by a qualified engineer or geomorphologist leading to possible stabilization actions, and “red zones” which should trigger immediate repair and stabilization efforts.

B. In years 1, 3, 5, 10, and 20 following construction and after a flow event exceeding the 10-year recurrence interval, the following activities shall be carried out:

1. A re-survey of the channel longitudinal profile and cross-sections using GPS (sub-meter accuracy or better). The longitudinal profile shall include a point on the thalweg every 50 feet where there are no visible steps or gradient changes in the channel profile, with additional points at any gradient changes. Where there are visible steps greater than 1 foot in height, these shall be captured at least with a survey point at the top and bottom of each step, and labeled as “knickpoints.” Top and base of both low flow channel banks shall

also be surveyed every 50 feet to create a 5 point cross section (top of left bank, base of left bank, thalweg, base of right bank, top of right bank).

2. The longitudinal profile shall be surveyed in more detail through in-channel structures such as step-pools, with particular attention to the scour pool geometry.
3. A visual inspection of each step-pool structure shall be performed. The inspection shall look for evidence of soil piping or washing out between rocks, movement of rock out of position (e.g., into the scour pool), presence of visible geotextile or cut-off wall materials, evidence for outflanking of the structure, exposure of the base of the toe rock.
4. The longitudinal profile shall be compared to the as-built profile and the as-built step-pool structures, so that scour relative to the depth of the rock armor can be noted.
5. The low flow channel configuration shall be compared with the channel migration zones.

C. After all flood events exceeding the 10-year recurrence interval flow, then a qualified geomorphologist or civil engineer shall conduct an inspection of the channel to evaluate for signs of erosion, "knickpoints," flanking of structures, and piping or erosion around the project structures. If the results of the inspection indicate evidence of channel instability, then a more detailed site investigation shall be carried out to determine whether corrective action is required.

FS-L9 **Flood Event Remedial Action Response—**The monitoring data described above will be used to determine whether remedial actions or more detailed studies are required. The criteria used to trigger more detailed investigations or maintenance/remedial actions will include (but will not be limited to) the following:

A. If the low-flow channel migrates into the "yellow zone," then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine the probability of further migration into a "red zone." If channel migration towards a "red zone" is occurring at a rate less than 3 feet per year, then this would trigger more frequent site inspections. These inspections shall include annual inspections and inspections after every large flow event (5-year recurrence interval flow or greater) until the channel migration ceases or the channel migrates away from the "red zone." If the rate of migration towards a "red zone" exceeds 3 feet per year or is within 10-feet of a "red zone," then

remedial actions will be implemented to stabilize the channel and restore channel functionality to comply with the basis of design criteria.

B. If channel erosion exposes the toe protection of the step-pools, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to and develop a remedial plan to stabilize the channel and structure (e.g. extend toe protection deeper, or use grade control downstream to restore the channel bed elevation at the step-pool).

C. If channel erosion results in a decrease in the channel elevation of 1-foot or greater over a length of more than 50 feet or forms "knickpoints," then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine whether the erosion/channel incision is likely to migrate and threaten the stability of project structures. If the results of the investigation indicate that the stability of the structures is in jeopardy, then a remedial plan will be developed to stabilize the channel and structure (e.g., keying in additional boulder ramps to the channel bed).

D. If channel aggradation occurs such that step-pool structures are buried by sediment and/or the low-flow channel is no longer well-defined, then a qualified geomorphologist or civil engineer shall conduct a more detailed investigation to determine whether the aggradational trend is short-term or long-term. For the purposes of this monitoring program, "short term" means that the structure was not buried in the previous monitoring survey and "long term" means that the structure was buried during the previous monitoring survey. If aggradation appears to be short-term, then a pilot channel shall be cut through the original step-pool alignment to ensure that subsequent erosive flows do not flank the step-pools and jeopardize the channel stability. The pilot channel shall have the same dimensions as the original design channel. If aggradation appears to be long-term and the aggradation does not threaten the stability of the channel, then the channel shall be allowed to form itself (no sediment removal shall be carried out). However, if the aggradation appears to be long-term and potentially threatens the stability of the channel, then a remedial plan will be developed to stabilize the channel.

E. Remedial plans described above will require review and approval by CDFG and Corps prior to implementing the remedial actions.

FS-L10 **Control of Undesirable Geomorphic Response**—In addition to the measures identified above, potential remedial techniques to prevent, mitigate, abate, or

control undesirable geomorphic response may be required to ensure proper function of flood control facilities. These measures will include (but will not be limited to) the following:

A. Repair, maintenance or replacement of creek structures and development improvements.

B. Stabilization (either partial or total) of eroded areas or failures of the creek slopes by removal and replacement with appropriate materials.

C. Maintenance of erosion control measures that, where feasible, will consist of bio-engineering techniques.

D. Placement of subsurface drainage devices (e.g., underdrains, or horizontal drilled drains).

E. Slope correction (e.g., gradient change, slope trimming or contouring).

F. Maintenance of additional surface ditches and/or ponds, sediment traps, or backfill of eroded channels. Concrete V-ditches may be added in some cases to function as low flow or nuisance water management systems to alleviate channel bed soil saturation issues or to minimize vegetative growth where growth impairs the proper function of a facility.

FS-L11 **Catastrophic Failures—**events related to full or partial failure of a structure will require, in some instances, immediate response and repair, sometimes during storm flow conditions.

A. Immediate implementation of repair or maintenance work to protect life or property or to maintain public service facilities in time of a proclaimed state of emergency shall follow the notification procedures of the Agency permits.

B. Extensive damage may require remaintenance or repair to creek bank stabilization (soil cement, gunite, grouted and ungrouted riprap, and other erosion control systems).

C. Geotechnical Instrument Installation and Monitoring may be required to investigate and control unstable subsurface geologic conditions.

D. If a Geological Hazard Abatement District (GHAD) is created, it will have a site specific Monitoring Program, including specific activities to be conducted to ensure safe geologic conditions in the project areas.

E. Major landslides may require filling, regrading, stabilization and debris removal from the Tributaries and other stormwater control system features.

F. Open Space Maintenance may be required after a damaging flood event or fire event to protect property and human health.

G. Revegetation efforts may be implemented for public safety, restoration, or aesthetic reasons within a damaged project area.

3.0 ASSOCIATED DOCUMENTS

This manual was developed based on several related documents. Some sections have been included in their entirety while others have been paraphrased, amended or corrected to be specific to the RMDP features expected within the Newhall Ranch Specific Plan development. These documents include:

- Valencia Company Natural River Management Plan (FEIR/FEIS, NRMP Permits, 1998–1999)
- DRAFT County of Los Angeles Department of Public Works Stormwater Best Management Practice Design and Maintenance Manual (January 2007)
- Newhall Ranch Resource Management & Development Plan (RMDP) (October 2008)
- Newhall Ranch Sub-Regional Stormwater Management Plan (SWMP) (January 2008).

MITIGATION AND MONITORING PLAN FOR IMPACTS TO WATERS OF THE UNITED STATES for the NEWHALL RANCH RESOURCE MANAGEMENT AND DEVELOPMENT PLAN SANTA CLARA RIVER AND TRIBUTARIES, UNINCORPORATED LOS ANGELES COUNTY, CALIFORNIA

Army Corps Permit No. 2003-01264-AOA

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Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

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1.0 DESCRIPTION OF THE PROJECT/IMPACT SITE

1.1 Responsible Parties

1.1.1 Permittee Responsibilities

The Newhall Land and Farming Company (Newhall Land) is the permittee for the Newhall Ranch Resource Management and Development Plan (RMDP) (Project) under Army Corps of Engineers Permit No. 2003-01264-AOA (Corps Permit). The contact person for Newhall Land is Matt Carpenter. Newhall Land or its designee is financially responsible for all costs associated with the implementation, monitoring, maintenance, and long-term management and protection of the mitigation areas, as defined in this document and the *Final Newhall Ranch Resource Management and Development Plan and Spineflower Conservation Plan Joint Environmental Impact Statement and Environmental Impact Report* (Final EIS/EIR; Corps and CDFG 2010) and Corps Permit. However, if Newhall Land transfers ownership of all or part of the RMDP area to another entity, the Corps may agree to substitute the purchaser for Newhall Land as the entity financially responsible for specific mitigation areas. The permittee or its designee is responsible for preparation of site-specific mitigation plans for each development component of the RMDP, and for construction documents. The permittee shall select a qualified biological consultant that possesses the minimum qualifications defined in **Subsection 1.1.2** to implement the mitigation program.

1.1.2 Project Biologist Qualifications and Responsibilities

The permittee shall use a qualified project biologist(s) to implement the mitigation program. 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 control and have expertise in plant and wildlife identification. The project biologist will possess at least 5 years of wetlands restoration experience in southern California.

In coordination with the permittee, the project biologist will perform or oversee the performance of the following items:

- Prepare site-specific mitigation plans as part of construction notifications to the Corps, and sub-notification submittal to California Department of Fish and Game (CDFG), that specifically address the impacts of individual development components of the RMDP (Dudek, December, 2010);

- Review subsequent development plans for compliance with the Corps Permit;
- Review grading plans for mitigation areas;
- During development construction, monitor approved development impact limits, site-clearing activities, and salvaging of topsoil and native vegetation to be used in the restoration process;
- During installation and maintenance, the project biologist will have the authority to stop work in situations in which biological resources not permitted to be impacted are in imminent danger of impacts;
- Monitor and report on mitigation installation activities to promote compliance with plans, specifications, the approved mitigation plan, and permits;
- Perform 5-year biological monitoring and reporting on each mitigation area consistent with the approved site-specific mitigation plan;
- Review installation and maintenance restoration contractor qualifications;
- Inform project personnel, prior to implementation of individual development components of the RMDP, of on-site environmental restrictions specific to each individual project site;
- Inform project personnel of the presence or potential presence of special-status species and vegetation communities within or adjacent to the mitigation project areas, as well as known biology-related dangers on site (e.g., rattlesnakes, beehives, stinging nettle);
- Verify access and staging areas are established outside of environmentally sensitive areas;
- Document in an observation report construction activities relating to the mitigation plan, including any project deficiencies;
- Prepare annual reports and summary progress reports for submittal to the Corps and the permittee.

1.1.3 Restoration Contractor Qualifications and Responsibilities

Restoration installation and maintenance shall be provided by a qualified contractor who has previous experience with habitat restoration in southern California and can demonstrate successful completion of wetland mitigation projects of similar size and vegetation community types. The restoration contractor hired for the 5-year period of mitigation maintenance may be separate from the installation contractor.

During the implementation phase, the restoration contractor will be responsible for project installation in accordance with the construction documents, the approved mitigation plan, and resource agency permits. Contractor responsibilities will include, but not be limited to, initial weed treatment(s) and biomass removal; irrigation installation, hook-up, and system start-up; seed mix installation; container plant installation; mulch installation; erosion control; grading/contouring; soil amending and preparation; and other tasks as required by the site-specific mitigation plan, construction documents, and resource agency permits. During the 5-year monitoring phase, the restoration contractor or other designated entity will be responsible for maintenance and operation of the irrigation system, weed control, erosion control, trash removal, access control, remedial actions (such as replanting) as deemed necessary to project success by the project biologist, and other tasks as directed by the project biologist and as described in construction documents. The restoration contractor's responsibility will continue until success criteria have been met, pursuant to resource agency permits and the site-specific mitigation plan.

1.2 Location of Project

The RMDP area is located in the Santa Clara River Valley in unincorporated northwestern Los Angeles County (County) and northeastern Ventura County (Figure 1, Regional Location, and Figure 2, Project Vicinity). The RMDP area lies west of Interstate 5 (I-5) and largely southwest of the junction of I-5 and State Route 126 (SR-126), with portions of the RMDP area located in San Martinez Grande and Chiquito canyons north of SR-126. Site elevations range from 825 feet above mean sea level in the Santa Clara River bottom at the Ventura County/Los Angeles County line to approximately 3,200 feet above mean sea level on the ridgeline of the Santa Susana Mountains along the southern boundary (Figure 2).

The RMDP encompasses the area covered by the previously approved Newhall Ranch Specific Plan, additional traffic/utility infrastructure related to the Specific Plan, and the Salt Creek area in Ventura County, adjacent to the Specific Plan area. The RMDP is depicted on Figure 3, along with proposed open space designations and development areas. The sensitive biological areas within this study area encompass the Specific Plan's River Corridor Special Management Area/Significant Ecological Area (SMA/SEA) 23, High Country SMA/SEA 20, Salt Creek area, Open Area,[1] and oak resources.

[1] Open Area is a land use designation, which includes a total of approximately 3,420 acres outside of the SMAs, including 1,921 acres that would be preserved to protect significant resources. The Open Area designation includes community parks, prominent ridges, bluffs, slopes, creek beds, and utility and trail system easements and will often function as a transition between development areas and the SMAs. Within the RMDP, the Open Area includes portions of Potrero Canyon, Humble Canyon, Lion Canyon, San Martinez Canyon, and Chiquito Canyon, as well as

1.3 Summary of Overall Project

The RMDP is a conservation, mitigation, and permitting plan for the long-term management of special-status biological resources within the 13,651-acre RMDP area. It also directs development in the RMDP, which would consist of infrastructure in or adjacent to the Santa Clara River and tributaries that are needed to implement the Specific Plan approved by Los Angeles County in May 2003. The RMDP infrastructure includes various flood control features, bridges/road crossings, stream bank stabilization, drainage facilities, roads, building pads, utility corridors, pipeline and utility river crossings, nature trails, the discharge outfall for the previously approved Newhall Ranch Water Reclamation Plant (WRP), and drainage facility maintenance activities.

The permanent impacts from the development of the Newhall Ranch Specific Plan have been reduced to 47.9 acres (7.2%) of waters of the United States of which 5.1 acres are wetlands (1.8% of total wetlands). The Mitigation Plan is a comprehensive program of preservation, enhancement, restoration and establishment that will result in a net increase of functions and values and acres of waters of the United States within the project area and will ensure that these values will be maintained in perpetuity. The mitigation areas will provide functions and services that equal or exceed the functions and services provided by the impacted jurisdictional waters, as measured by the Hybrid Assessment of Riparian Condition (HARC) average-weighted (AW) scores for the impacted areas and mitigation areas. See section 1.5.1 for a discussion of HARC methodology.

1.3.1 Mitigation Program Elements

As compensation for impacts to waters of the United States, the Project will:

A. Preserve and protect in perpetuity, 612.2 acres of waters that are not permanently impacted, including 271.8 acres of wetlands. These areas will be protected by a conservation easement or deed restriction and will be managed under an endowed long-term management plan. The ratio of preserved acres to permanently impacted waters is **12.8 to 1,** and **53.3 to 1** for impacted wetlands.

B. Enhance, restore and create 132.2 acres of waters of the United States, including 94.3 non-wetland acres in tributaries to the Santa Clara River and 35.2 acres of wetlands in the River and its tributary drainages. The 113.6 acres of enhanced, restored and created tributaries will be distributed in Salt Canyon (38.2 acres – 19.7 enhanced only), Long Canyon (23.4 acres), San Martinez Grande Canyon (6.8 acres), Chiquito Canyon (9.8

areas adjacent to Potrero Mesa, Grapevine Mesa, and Airport Mesa. These areas are known to support a variety of special-status species.

acres), Potrero Canyon (14 acres) and Lion Canyon (2.1 acres) as shown below. Of the 35.2 acres of wetlands establishment, 18.6 acres will be adjacent to the Santa Clara River and 19.3 acres will be adjacent to Potrero Creek. Overall, impacts to tributaries in acres will be mitigated at a **2.74 to 1** ratio and impacts to site-wide wetlands will be mitigated at a **6.9 to 1** ratio in acres. Functions and values will exceed pre-project conditions.

C. Protect all mitigation areas in perpetuity by conservation easements or deed restrictions, including maintenance under a long term management plan supported by an endowment.

D. Restore all temporary impacts by revegetating those areas with appropriate native vegetation after completion of construction in the area.

Other Considerations

A. Mitigation will be coordinated with Fish and Game, and Corps jurisdiction will be conterminous with or buffered by additional CDFG riparian areas.

B. Project will employ advanced LID measures which will be selected and sized to retain the volume of stormwater runoff produced from a 0.75 inch storm event to reduce the percentage of Effective Impervious Area (EIA) to 5 percent or less of the total project area within each vesting tentative map project and associated off-site project improvements. Runoff from all EIA shall be treated with treatment control measures that are selected to address the pollutants of concern and are sized to capture and treat 80 percent of the average annual runoff volume.

C. Mitigation created in excess of these requirements for impacts of the project will be available for other Permittee-responsible activities in accordance with Corps regulations.

Five tentative maps are planned to be submitted over a period of time as part of the Project: Landmark Village, Mission Village, Homestead Village North, Homestead Village South, and Potrero Village. Numerous infrastructure components may be proposed as part of tentative map submittals or as individual projects. Likewise, the tentative map areas may be subdivided into phases and submitted separately.

Under this Mitigation Plan, Newhall is to implement 54.9 acres of mitigation prior to any permanent impacts to waters of the United States. Additional mitigation is to be implemented concurrently with construction of project phases (i.e., prior to or within two years of impacts). Overall, the mitigation will substantially increase the acreage, and functions and services, from areas lost to unavoidable impacts.

Initiation of a Corps advanced mitigation site is defined as: 1) completion of site preparation; 2) installation of temporary irrigation; and 3) seeding and/or planting of the mitigation site. Table 1

summarizes the tentative maps and infrastructure components that make up the project, and the associated mitigation projects. The tentative maps may be submitted in any sequence. Mitigation for temporary impacts will be implemented within two years of impacts, unless precluded by ongoing project construction.

Table 1
Development Projects and Associated Mitigation

Project Description	Mitigation Acres	Mitigation Location
Advanced Mitigation	15.9	Santa Clara River: Mayo Crossing (River)
Advanced Mitigation	19.3	Lower Potrero Canyon/Lower Potrero Cismontane Alkali Marsh (Tributary)
Advanced Mitigation	19.7	Salt Creek Livestock Exclusion/Enhancement: Portions of Mid- and Upper Salt Creek (Tributary)
Advanced Mitigation subtotal	*54.9*	
Landmark Village	2.7	Santa Clara River
Mission Village	20.6	Lion (Tributary) Lower-Middle Salt Canyon (Tributary)
WRP/Utility Corridor	—	
Homestead South	23.4	Long Canyon (Tributary)
Homestead North	16.6	Chiquito (9.8) and San Martinez Grande (6.8) (Tributary)
Potrero Valley	14.0	Potrero Canyon (Tributary)
Mitigation Total	**132.2**	

FIGURE 1

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Regional Location

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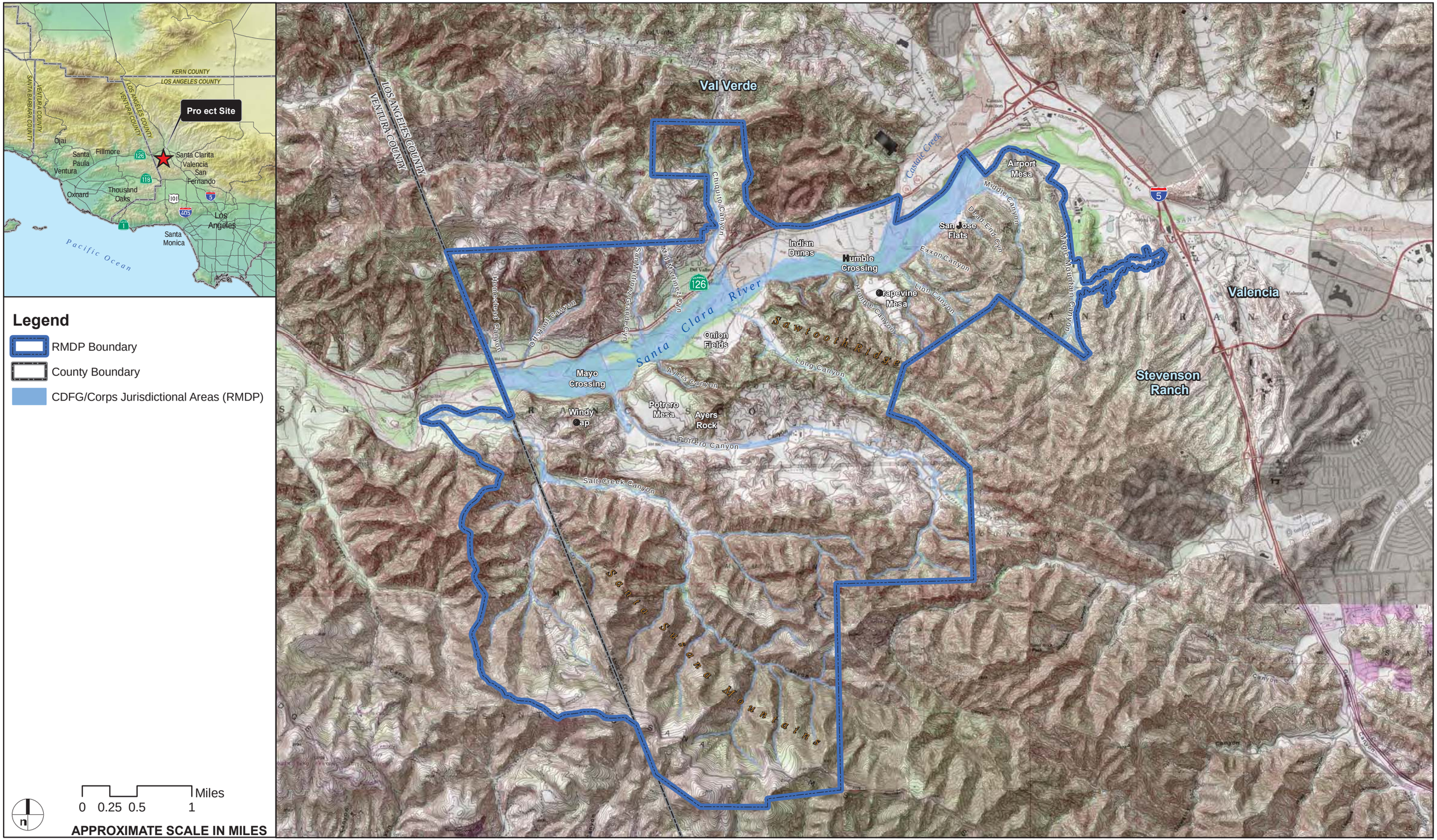

FIGURE 2

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Pro ect Vicinity

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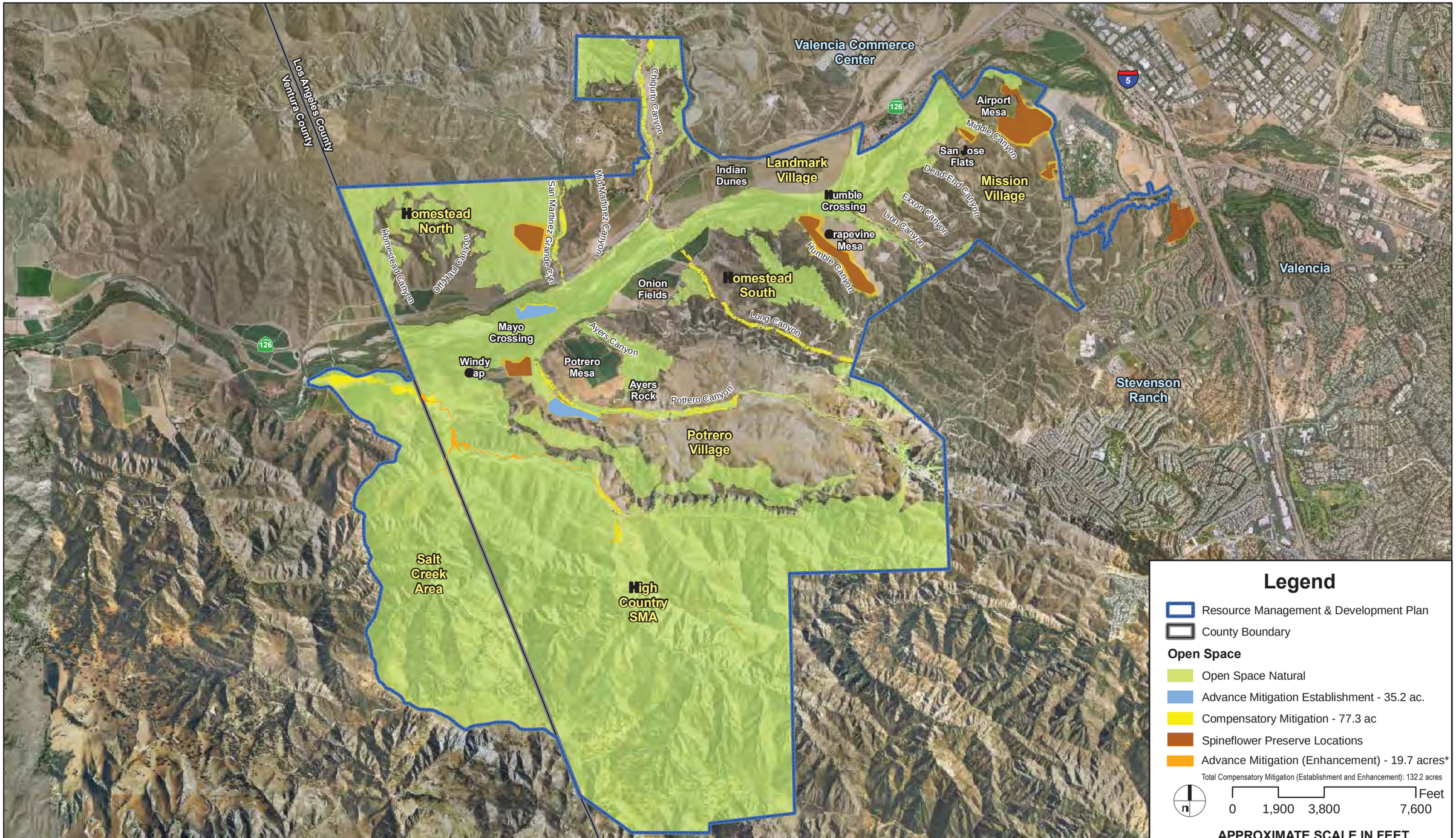

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FIGURE 3

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

RMDP Study Area

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1.3.2 Mitigation Documents and Approval Process

This Mitigation Plan provides a program of compensatory mitigation for permanent and temporary impacts to jurisdictional waters of the United States authorized by the Corps Permit. The Corps information requirements and approval process will include the following steps:

A. Newhall will provide written notification to the Corps ("Construction Notification") for each phase of RMDP development, prior to initiation of grading and project construction in waters of the United States.

B. The Construction Notification will include the following:

1. An updated preliminary or approved jurisdictional delineation of waters of the United States and a site-specific mitigation plan as specified in Special Condition XX of the Corps Permit and in this Mitigation Plan. Based on the updated jurisdictional delineation, the acreages and locations of all impacts to waters of the United States, as well as the acreage and location of the recalculated compensatory mitigation, shall be included in the required notification;
2. Written description for all the proposed structures (including RMDP Project Name), a description of the permanent and temporary impacts in waters of the United States, maps showing project location, impact acreages and drawings for all proposed structures, written documentation regarding compliance with all applicable special conditions of the Corps Permit and a description of all measures to avoid and minimize impacts to waters of the United States;
3. Name and address of contractor performing the work, an onsite point of contact and the size and type of equipment that shall be performing the work;
4. For projects located in the Potrero Canyon watershed, a written description documenting compliance with the required design criteria for grade control structures (Special Condition XX) and road crossings (Special Condition XX);
5. Schedule for beginning and ending the project; and
6. Summary of all temporary and permanent impacts to waters of the United States that have been completed as part of previous project phases as well as a summary of all the initiated and completed compensatory mitigation areas for previous project phases.

Individual construction notification requests shall include applicable site-specific mitigation plans, which shall include the information specified in 33 CFR section 332.4(c)(2)-(14) and shall comply with the provisions of Special Condition XX of the Corps Permit. The site-specific mitigation plans shall be consistent with this Plan and largely follow the Corps Guidelines for Mitigation and Monitoring Plans in structure and content (Corps 2004). The site-specific mitigation plan shall incorporate the approved development plan impacts and detailed information that describes the mitigation approach to the specific mitigation site. Site-specific mitigation plans shall provide assurance that the proposed mitigation design and target functions and values are justified based on anticipated post-project site conditions and hydrology.

The Corps will verify the delineation and determine whether the avoidance, minimization, and compensation measures identified in the construction notification request comply with the terms and conditions of the Corps Permit. If the Corps determines that the proposed activity complies with the terms and conditions of the Corps Permit, the Corps will issue a notice to proceed to the permittee.

1.4 Existing Conditions

The existing conditions within the RMDP are described in detail within the Final EIS/EIR (Corps and CDFG 2010). Figures 4A through 4G in this Plan, Existing Conditions of RMDP Site, depict the existing vegetation communities.

1.4.1 Field Reconnaissance

Vegetation maps of the RMDP area were used in the field to identify potential mitigation areas, opportunities, and constraints. Only areas within the proposed open space/preserve boundaries were evaluated. In general, areas supporting special-status plant species were not considered suitable for mitigation in order to avoid impacts to special-status plants. Dudek habitat restoration specialists Doug Gettinger, Marc Doalson, Scott Boczkiewicz, and Andy Thomson conducted the mitigation potential surveys in the Newhall Ranch High Country SMA and the Salt Creek area on November 7–10, November 14–18, and December 19–21, 2005. In the remaining Specific Plan area, Dudek habitat restoration specialists Doug Gettinger, Jeremy Sison, Mike Sweesy, and Andy Thomson conducted the mitigation potential surveys on August 15–16, 2006.

A list of plant species observed within the Specific Plan area from 2002 to 2006 is presented in Appendix A.

1.4.2 Existing Plant Communities and Land Covers

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

Fourteen general vegetation community types and three human-dominated land cover types (i.e., active and inactive agriculture, disturbed land, and developed land) were identified in the project area during the field investigations. The descriptions in Table 2 are organized by general vegetation community type, floristic alliance (as applicable), and association (as applicable).

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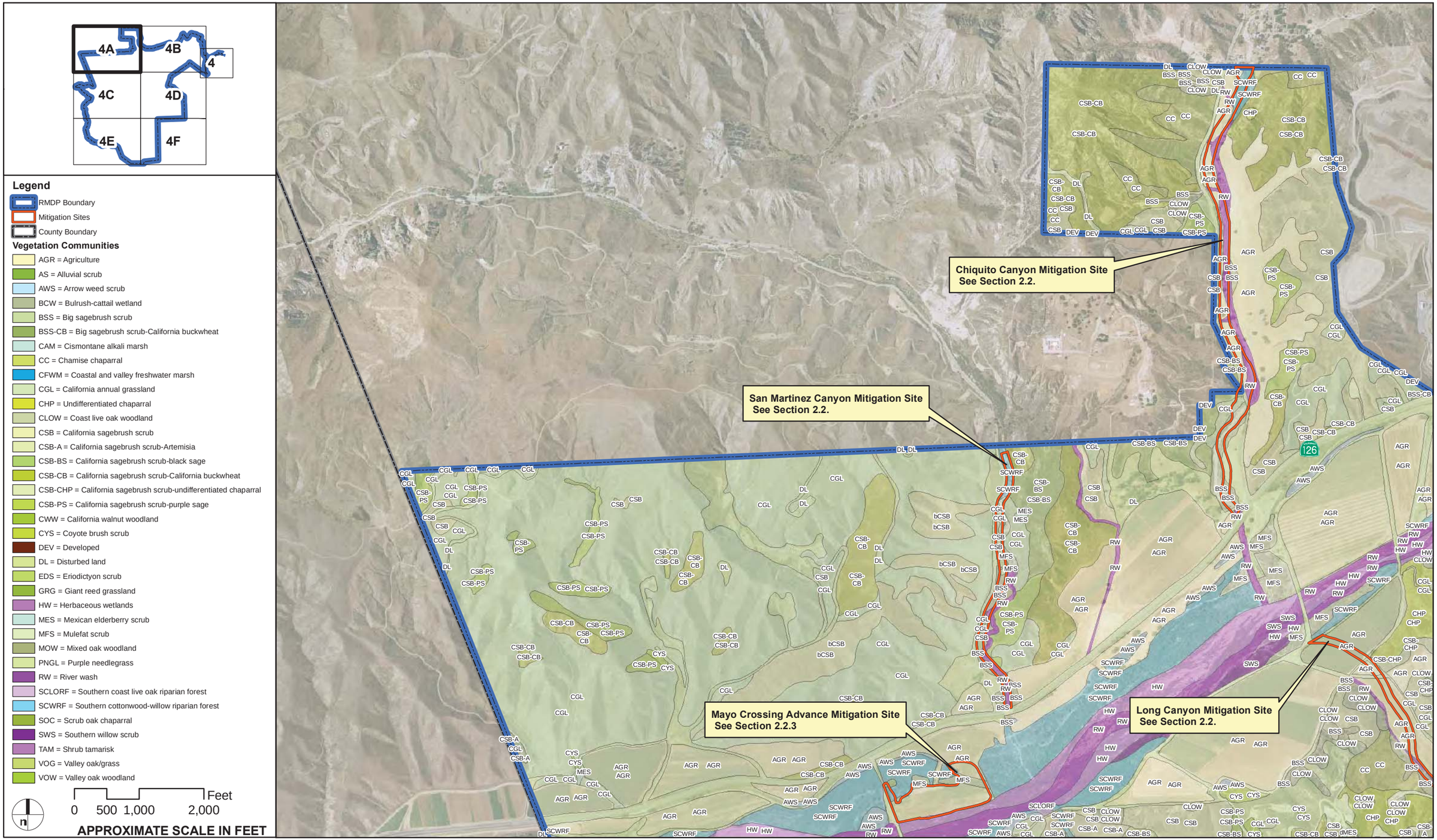

FIGURE 4A

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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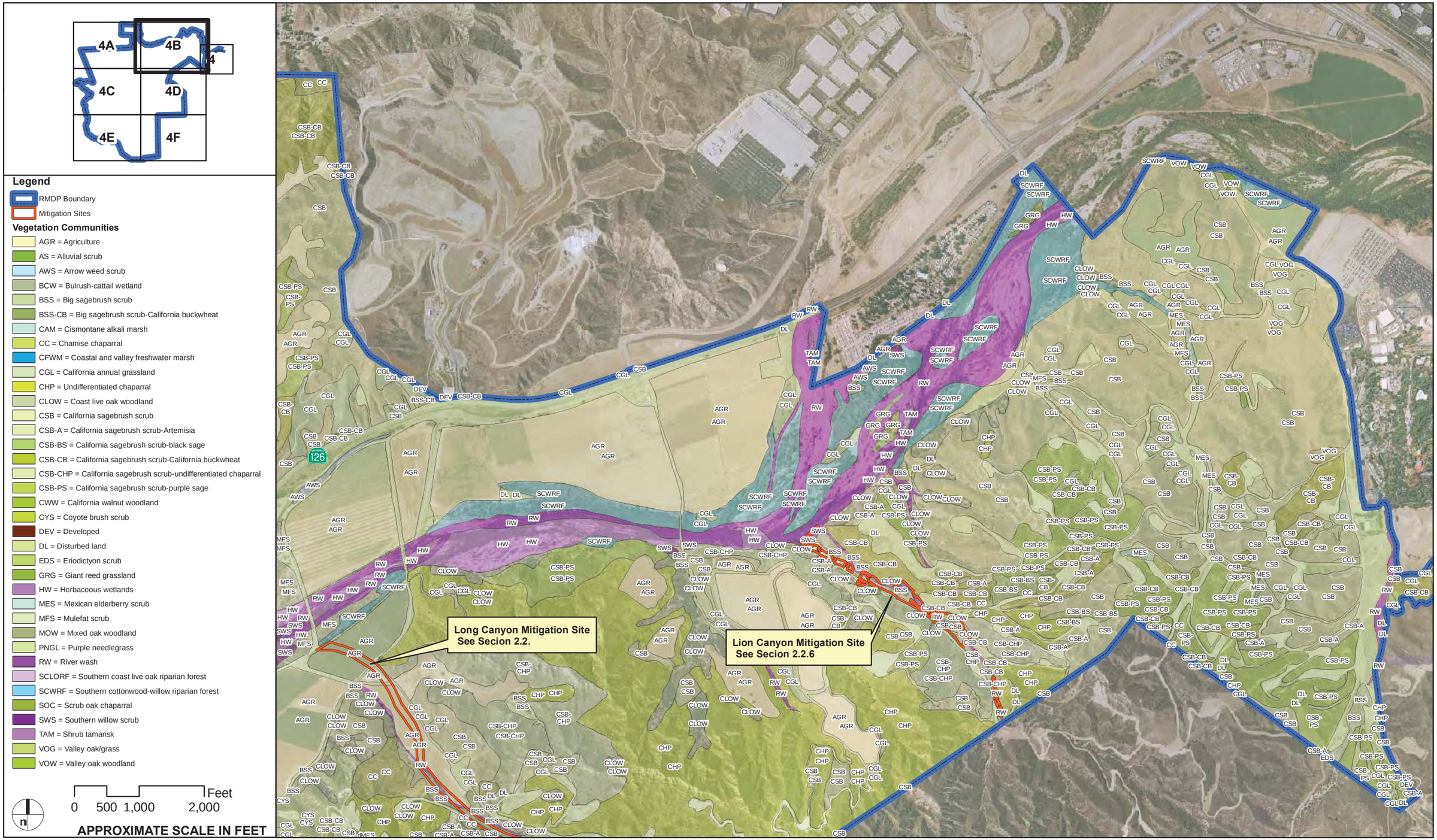

FIGURE 4B

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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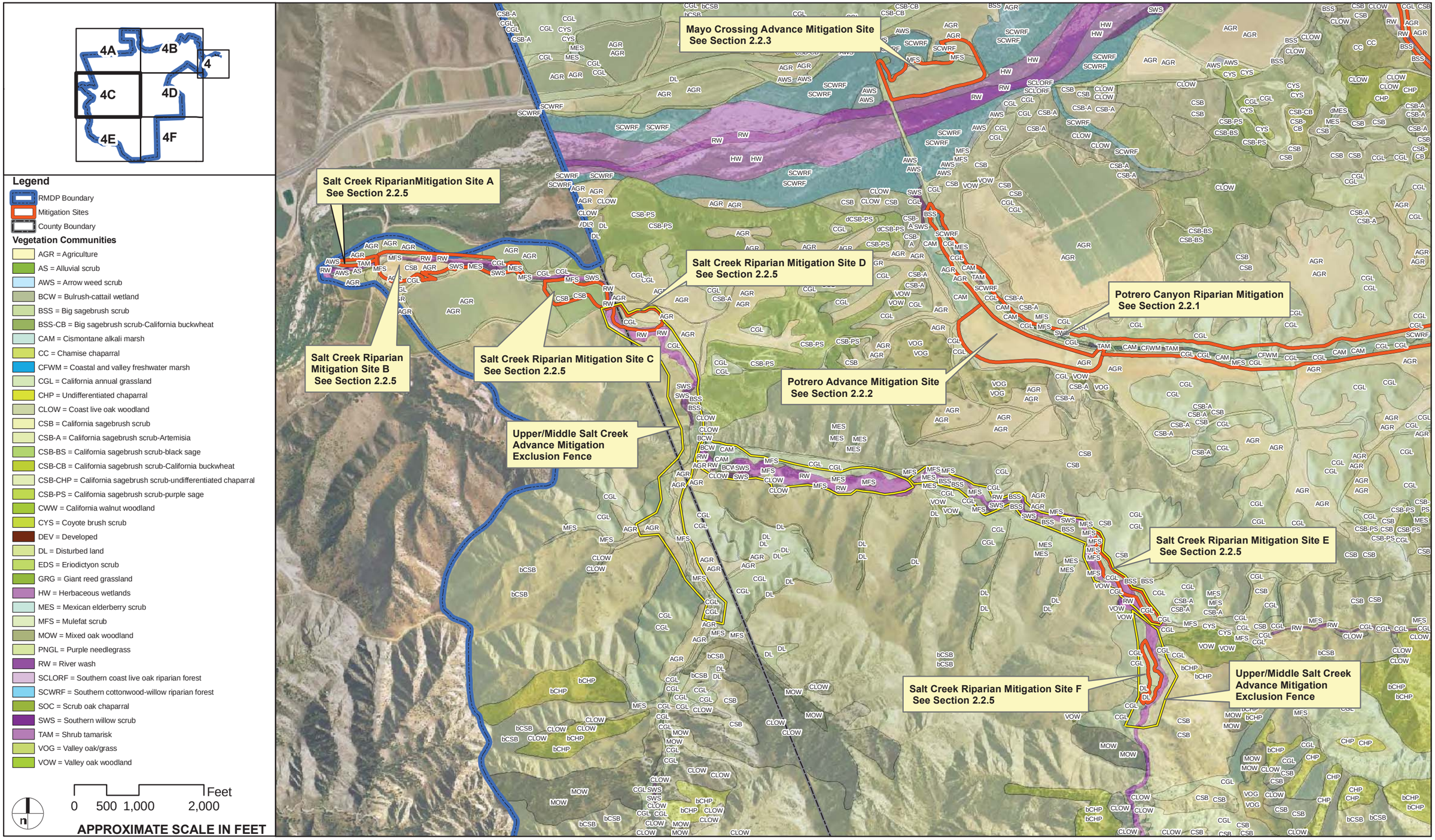

FIGURE 4C

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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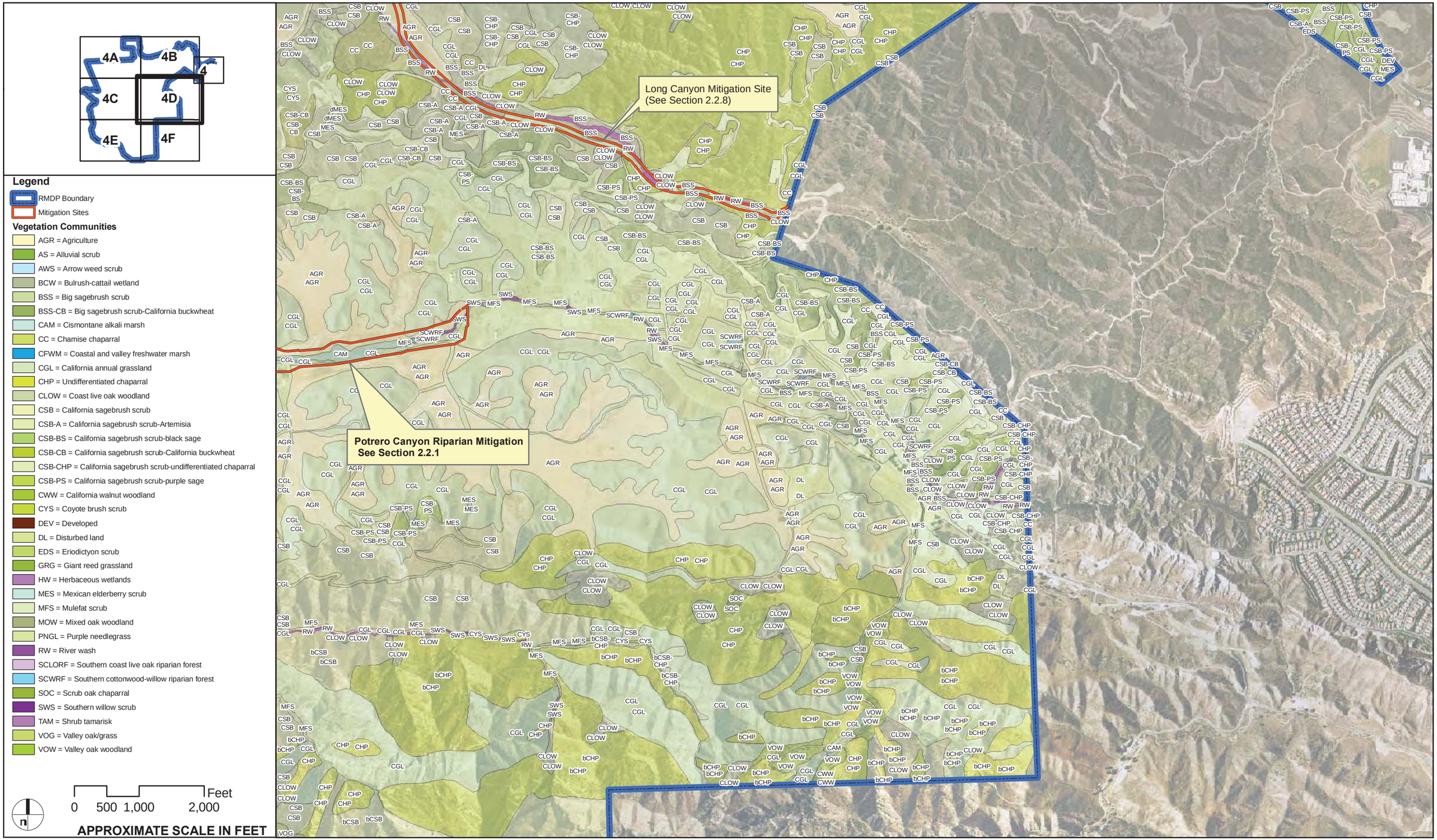

FIGURE 4D

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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FIGURE 4E

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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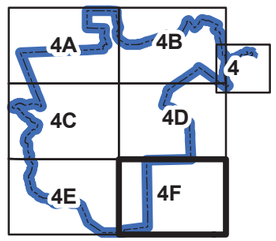

Legend

RMDP Boundary

Vegetation Communities

- AGR = Agriculture
- AS = Alluvial scrub
- AWS = Arrow weed scrub
- BCW = Bulrush-cattail wetland
- BSS = Big sagebrush scrub
- BSS-CB = Big sagebrush scrub-California buckwheat
- CAM = Cismontane alkali marsh
- CC = Chamise chaparral
- CFWM = Coastal and valley freshwater marsh
- CGL = California annual grassland
- CHP = Undifferentiated chaparral
- CLOW = Coast live oak woodland
- CSB = California sagebrush scrub
- CSB-A = California sagebrush scrub-Artemisia
- CSB-BS = California sagebrush scrub-black sage
- CSB-CB = California sagebrush scrub-California buckwheat
- CSB-CHP = California sagebrush scrub-undifferentiated chaparral
- CSB-PS = California sagebrush scrub-purple sage
- CWW = California walnut woodland
- CYS = Coyote brush scrub
- DEV = Developed
- DL = Disturbed land
- EDS = Eriodictyon scrub
- GRG = Giant reed grassland
- HW = Herbaceous wetlands
- MES = Mexican elderberry scrub
- MFS = Mulefat scrub
- MOW = Mixed oak woodland
- PNGL = Purple needlegrass
- RW = River wash
- SCLORF = Southern coast live oak riparian forest
- SCWRF = Southern cottonwood-willow riparian forest
- SOC = Scrub oak chaparral
- SWS = Southern willow scrub
- TAM = Shrub tamarisk
- VOG = Valley oak/grass
- VOW = Valley oak woodland

n

0 500 1,000 2,000 Feet

APPROXIMATE SCALE IN FEET

FIGURE 4F

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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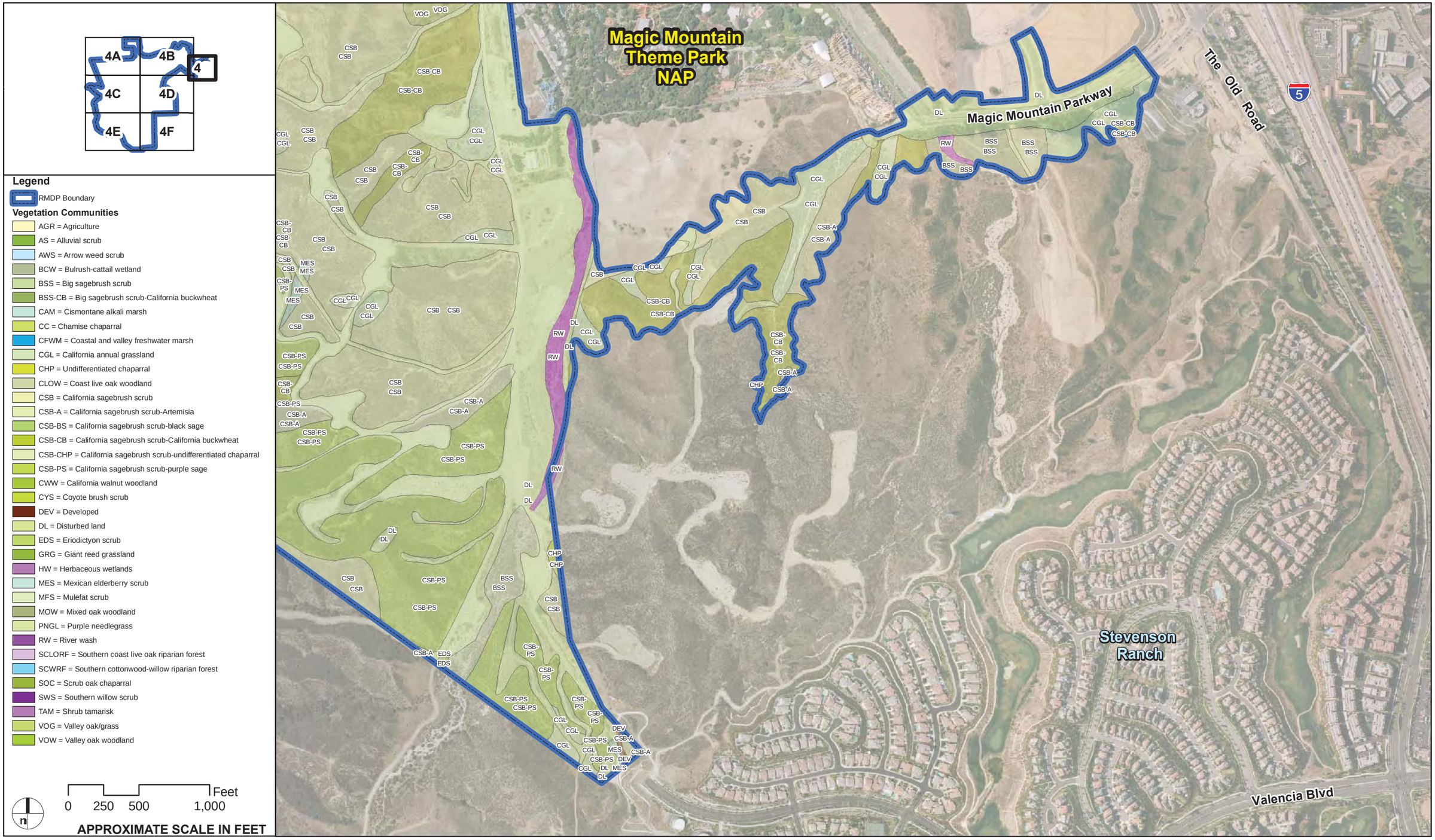

FIGURE 4G

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Existing Conditions of RMDP Site

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Table 2
Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage
Grass and Herb Dominated Communities	Non-Native Grassland	California annual grassland	Not mapped to association level	2,175.5
	Native Grassland	Purple needlegrass	Not mapped to association level	0.6
Scrub and Chaparral	Coastal Scrub	California sagebrush scrub	Not mapped to association level	1,529.3
			Burned California sagebrush scrub	1,469.3
			California sagebrush–*Artemisia californica*	82.5
			California sagebrush–purple sage	393.5
			Disturbed California sagebrush–purple sage	4.5
		California sagebrush–black sage scrub	California sagebrush–black sage	196.3
		California sagebrush–California buckwheat scrub	Not mapped to association level	310.0
		California sagebrush scrub–undifferentiated chaparral	Not mapped to association level	135.0
			Burned California sagebrush scrub–undifferentiated chaparral	5.2
		Coyote brush scrub	Not mapped to association level	9.2
	Undifferentiated Chaparral Scrubs	Not mapped to alliance level	Not mapped to association level	1,106.9
			Burned undifferentiated chaparral	957.2
	Chaparral with Chamise	Chamise chaparral	Not mapped to association level	55.7
			Burned chamise chaparral	0
	Chaparral with Oak	Scrub oak chaparral	Not mapped to association level	1.5
	Other Scrubs	Eriodictyon scrub	Not mapped to association level	0.2
Broad Leafed Upland Tree Dominated	Upland Walnut Woodland and Forest	California walnut woodland and forest	California walnut woodland	27.2
	Oak Woodland and Forest	Coast live oak forest and woodland	Coast live oak woodland	757.8
		Mixed oak woodland and forest	Not mapped to association level	168.9
		Valley oak forest and woodland	Valley oak woodland	79.4
			Valley oak/grass	461.4
Bog and Marsh	Marsh	Bulrush–cattail wetland	Not mapped to association level	1.4
		Cismontane alkali marsh	Not mapped to association level	18.6
		Fresh–brackish water marsh	Coastal and valley freshwater marsh	2.0
Riparian and Bottomland	Other Riparian/Wetland	Herbaceous wetland	Not mapped to association level	183.1

Table 2
Existing Vegetation Communities, Floristic Alliances and Associations, and Land Cover Types in Project Area

General Physiognomic and Physical Location	General Habitat Type	Floristic Alliance	Association	RMDP Acreage
Habitat		River wash	Not mapped to association level	290.0
		Alluvial scrub	Not mapped to association level	1.0
		Big sagebrush scrub	Not mapped to association level	76.5
		Big sagebrush scrub	Big sagebrush-California buckwheat	0.5
		Giant reed	Not mapped to association level	5.6
	Low to High Elevation Riparian Scrub	Arrow weed scrub	Not mapped to association level	18.7
		Mexican elderberry	Not mapped to association level	12.8
		Mexican elderberry	Disturbed Mexican elderberry	0.3
		Mulefat scrub	Not mapped to association level	71.5
	Riparian Forest and Woodland	Southern willow scrub	Not mapped to association level	22.7
		Tamarisk scrub and woodland	Shrub tamarisk	2.8
		Coast live oak forest and woodland	Southern coast live oak riparian forest	0.7
		Fremont cottonwood riparian forest and woodland	Southern cottonwood–willow riparian	358.3
Man-Made Land Cover Types		Agriculture	NA	1,576.4
		Developed land	NA	0.5
		Disturbed land	NA	1,080.6
			Total	**13,651.1**

1.4.3 Soils

Soils present on the RMDP site include:

- Anacapa sandy loam, 2% to 9% slopes
- Badland
- Castaic–Balcom complex, 30% to 50% slopes, eroded
- Castaic–Balcom complex, 50% to 65% slopes, eroded
- Castaic and Saugus soils, 30% to 75% slopes, eroded
- Castaic–Balcom silty clay loams, 9% to 15% slopes
- Castaic–Balcom silty clay loams, 15% to 30% slopes
- Castaic–Balcom silty clay loams, 30% to 50% slopes
- Castaic–Balcom silty clay loams, 30% to 50% slopes
- Castaic–Balcom silty clay loams, 50% to 65% slopes
- Castaic and Saugus soils, 30% to 65% slopes, severely
- Chino loam
- Cortina sandy loam, 0% to 2% slopes
- Garretson loam, 2% to 9% slopes
- Gaviota rocky sandy loam, 15% to 30% slopes, eroded
- Gaviota rocky sandy loam, 30% to 50% slopes, eroded
- Garretson gravelly loam, 2% to 9% slopes
- Gazos clay loam, 30% to 50% slopes
- Gaviota rocky sandy loam, 15% to 50% slopes
- Gazos silty clay loam, 30% to 50% slopes
- Hanford sandy loam, 0% to 2% slopes
- Hanford sandy loam, 2% to 9% slopes
- Landslides
- Metz loamy sand, 0% to 2% slopes

- Metz loamy sand, 2% to 9% slopes
- Metz loam, 2% to 5% slopes
- Mocho loam, 0% to 2% slopes
- Mocho loam, 2% to 9% slopes
- River wash
- Sandy alluvial land
- Saugus loam, 30% to 50% slopes
- Saugus loam, 30% to 50% slopes, eroded
- Sorrento loam, 0% to 2% slopes
- Sorrento loam, 2% to 5% slopes
- Sorrento loam, 2% to 9% slopes
- Terrace escarpments
- Yolo loam, 0% to 2% slopes
- Yolo loam, 2% to 9% slopes
- Zamora loam, 2% to 9% slopes
- Zamora loam, 9% to 15% slopes
- Yolo loam, 0% to 2% slopes.

In general, soils on the RMDP site are characterized by moderately deep to very deep soils that are moderately well drained to excessively well drained. Parent material consists of sedimentary rocks (e.g., sandstone, shale, and mudstone), granite, and alluvium. Two soil types are defined as farmland of statewide importance: Cortina sandy loam and Sorrento loam; and eleven soil types are defined as prime farmland, if irrigated: Anacapa sandy loam, Chino loam, Garretson loam, Garretson gravelly loam, Hanford sandy loam, Metz loamy sand, Metz loam, Mocho loam, Sorrento loam, Yolo loam, and Zamora loam (2% to 9% slopes). Prime farmland ranges from 0% to 9% slopes throughout the RMDP area. Slopes range from 0% to 75% throughout the RMDP area. In low-lying areas, the erosion hazard is slight to moderate, and the runoff rate is slow to medium. On the steeper slopes, the erosion hazard is moderate to very high, largely dependent on slope steepness (USDA 1969).

1.4.4 Geomorphic Conditions and Riparian Resources of the Santa Clara River

As described in **Section 4.1**, Surface Water Hydrology and Flood Control of the Final EIS/EIR, the Project area is located within the Santa Clara River watershed, which drains an area of approximately 1,624 square miles in the Transverse Mountain Ranges of southern California. Elevations within the watershed range from sea level at the river mouth to 8,800 feet at the summit of Mount Pinos in the northwest corner of the watershed. The Santa Clara River flows generally from east to west from its headwaters near Acton to the Pacific Ocean near the City of Ventura, approximately 40 miles downstream of the Newhall Ranch Specific Plan subregion. The Santa Clara River transects the northern portion of the Project area from east to west.

The Santa Clara River is perennial from the existing Valencia WRP, downstream to approximately 3.5 miles downstream of the Los Angeles County/Ventura County line (western limit of the Project boundary) near Rancho Camulos. Flows in the Santa Clara River also can be affected by groundwater dewatering operations or by diversions for agriculture or groundwater recharge. Throughout the Santa Clara River channel, complex surface water/groundwater interactions lead to areas of alternating gaining and losing river segments (PWA 2008).

The existing floodplain generally consists of a natural alluvial river system and has multiple channels (braided channels) within and adjacent to the Newhall Ranch Specific Plan area. Bed material in the Santa Clara River is mostly composed of non-cohesive sands and gravels. Bank erosion is due to flow impinging upon the banks. This kind of system is characterized by high sediment loads, high bank erodibility, and intense and intermittent runoff conditions. Combined with the relatively flat gradient of the river through the Project area (average slopes range from 5% to 0.5%), it has a high potential to aggrade (deposit sediment) at low velocities.

The diversity of habitat conditions in the Santa Clara River at any one time supports a variety of aquatic invertebrates, aquatic plants, and fishes. The density, biomass, and location of vegetation in relation to the channel bottom are directly dependent upon the frequency of disturbance by flood flows. Successional mulefat scrub occupies the active channel and is disturbed annually by flows. Channel-bottom habitat also includes all aquatic features, such as pools and flowing water, as well as most of the emergent wetlands in the River corridor, because of the presence of water. In contrast, mature riparian forests are located above the active river channel and are only flooded during infrequent storm events, allowing large trees to become established between events.

Stands of vegetation are eroded by high flows, and newly vegetated areas are created where vegetation becomes established by seeds or buried stems. Often during high flows, new sandbars are formed and old ones are destroyed. High flows can also change the alignment of the low-

flow channel as well as the number and location of aquatic habitats of the river. In high-flow years, wetland vegetation along the margins of the low-flow channel and pools may increase. In high-flow years, this vegetation would be removed but would likely become reestablished during the spring and summer by natural colonization processes (PWA 2008).

1.4.5 Geomorphic Conditions and Riparian Resources of the Tributary Drainages

PWA (2008) conducted an assessment of existing geomorphic conditions and riparian resources to characterize channel conditions of five primary tributary basins within the Project area. Overall, the three tributaries on the south side of the Santa Clara have certain common characteristics, as do those on the north side:

- South side tributaries (Lion, Long, and Potrero) are characterized by small watershed areas (1.5 to 5 square miles); steep channel slopes (2% to 5%); very high watershed sediment supply (resulting in channel aggradation, even with steep slopes); and unstable channels (with actively migrating headcuts). The Project would impact most of the watershed areas in these tributaries.
- The north side tributaries (Chiquito and San Martinez Grande) have somewhat larger watersheds (3 to 5 square miles) with a majority being upstream of the Project area boundary. They are more deeply incised in the lower reaches, convey large amounts of sand, and discharge as alluvial fans on the Santa Clara River floodplain. Flows from these drainages are conveyed under SR-126 to confluence with the Santa Clara River immediately downstream. The Project would impact only the lower reaches and a smaller percentage of the total watershed area in these tributary drainages.

In general, the tributaries are ephemeral or highly intermittent in nature and do not support perennial flows. Perennial tributary drainages include lower Potrero Canyon and portions of Salt Creek Canyon. Discharge from the Middle Canyon spring is also perennial and supports riparian habitat along the southern bank of the Santa Clara River, just downstream from the confluence with Middle Canyon.

According to PWA (2008), the geomorphology of the active tributaries to the Santa Clara River within the Project area are generally characterized as highly variable and sinuous alignments reflective of the influence of the physical and topographic features. There is also a high degree of variation of the active channel geometry (i.e., width and depth) along these relatively short channel reaches. In general, the active portions of the creeks are more deeply incised below the canyon valley floors. The floodplains are generally entirely contained within the active creek

banks, and there is little over-bank flow. The changes in creek geometry and form may indicate influences from the upper watersheds that affect the sediment delivery. The change in channel geometry is also reflected in coincidental variations of the streambed slopes (i.e., the slope variations are generally higher in the contractions of the channel geometry and flatter in the expansion areas, upstream and downstream) (PWA 2008). The following excerpts are taken from the geomorphology study prepared by PWA to describe the specific conditions of the tributary channels (PWA 2008):

> **Chiquito Canyon.** Chiquito Canyon has a watershed area of 4.9 square miles at the downstream project limit and drains south into the north bank of the Santa Clara River. The watershed is currently used for a combination of cattle grazing, and residential and commercial land uses within the community of Val Verde located immediately upstream of the Project area. Chiquito Canyon enters the project area in a confined reach with very high, unstable banks[2]. Further downstream it exits its confined canyon and enters a long reach that is dominated by a series of large alluvial fans on the east bank. These fans are supplying abundant sand to the creek and the channel has formed low banks in the toe of the fan that have little erosion resistance, in part due to the arable land use and lack of woody vegetation. As a result this reach is aggrading and widening. Further downstream the channel becomes slightly incised as it cuts through the alluvial fans, leaving abandoned terraces on the banks that are actively eroded on outside bends. Towards the downstream end of the canyon, the channel remains slightly confined and has been modified by a series of bridges and culverts. In places these appear to cause local backwaters and sediment deposition (Final EIS/EIR, **Appendix 4.2**).
>
> The portion of the Chiquito Canyon drainage within the RMDP site follows a mildly sinuous pattern within long, linear meanders reflecting the influences of the physiographic features along the valley floor. The active channel is incised in the lower 2,500 feet upstream from the SR-126 roadway crossing, while the remainder has developed a shallower active channel and wider drainage area. The hydraulics along this portion of the stream area also are influenced by two different existing roadway crossing locations within the RMDP area that include SR-126, a local access roadway arch crossing, and the Chiquito Canyon Road crossing. Detailed hydraulic modeling of the existing floodplain was performed by PACE. The modeling indicated that a major portion of the Chiquito Canyon floodplain was hydraulically "steep" (Froude numbers greater than a value of 1.0

[2] Confinement refers to the valley/canyon width. If the valley width is narrow (confined), then lateral migration of the channel is limited and the channels are typically less-sinuous with limited floodplain area. If the valleys are wide (unconfined), then there is typically greater lateral migration, sinuousity, and potentially braiding.

which indicates supercritical flow conditions) with an average streambed slope of the channel of approximately 2.39 percent. (PACE, 2008B; see **Appendix 4.1**.)

San Martinez Grande Canyon. San Martinez Grande Canyon has a watershed area of 3.6 square miles and drains south into the north bank of the Santa Clara River. The watershed is currently used for a combination of cattle grazing, rural residential, and industrial (oil and gas) land uses. San Martinez Grande Canyon combines a series of reaches alternating between unconfined stable reaches with small inset floodplains and aggradational conditions with actively eroding outside bends. The upper reach has a well-defined and relatively stable bankfull channel that contains the 5-year flow adjacent to a small inset floodplain. Downstream the channel is wider and many outside bends are actively eroding into relict raised floodplain terraces, creating failing banks. Downstream of this reach the valley widens and the channel becomes more stable with small floodplains[3] that persist towards the downstream end of the channel.

Detailed hydraulic modeling of the existing floodplain was performed by PACE (2008B). The modeling indicated that approximately 50 percent of the lower reach of the San Martinez Grande Canyon floodplain was hydraulically "steep," (Froude numbers greater than a value of 1.0 which indicates supercritical flow conditions) while the remainder of the canyon, primarily the upper portion to the RMDP boundary, was hydraulically a "mild" channel (Froude numbers less than a value of 1.0 which indicates subcritical flow conditions). The channel bed slopes range from eight percent in the narrower areas to 0.5 percent in wider, depositional areas. (PACE, 2008B; see Final EIS/EIR, **Appendix 4.1**.).

Lion Canyon. Lion Canyon has a watershed area of 0.8 square mile and drains westerly into the bank of the Santa Clara River. The watershed is currently used for a combination of cattle grazing and oil production. Lion Canyon has steep headwaters (above the project boundary) that supply large amounts of sediment into the aggrading upper reach, producing an undersized, transport-limited channel. Aggradation continues downstream producing a well-connected and vegetated floodplain. There is a short stable reach with mature oaks upstream of another aggradational reach which terminates at an existing culverted road crossing. There is a very sharp transition from aggrading to eroding conditions downstream of the road crossing, which acts as a grade control protecting the upper reaches from headcutting and incision. Downstream of the grade control is a 12-foot high knickpoint

[3] A floodplain is the area adjacent to a stream channel that consists of sediments deposited during the present hydrologic regime and is inundated with water when the stream overflows its banks. Floodplain connection describes the relationship between the stream and the adjacent floodplain that influences the ability of water to flow into or out of the wetland or to inundate adjacent uplands during high-water periods.

(bedrock outcrop) and a reach of deeply incised channel with some failing banks. This reach opens up into a wider section that historically incised material derived from the right hillside (identified by the geotechnical assessment as a former quarry spoil deposit). This material constrained the channel and deflected it to the left bank where it is actively eroding and causing slab failures. Despite the longer-term appearance of incision, the bed shows recent signs of aggradation. Downstream the channel remains historically incised with erosion on the outside bends, local bed aggradation, and the formation of a small new floodplain on the inner bends. The right valley side looking downstream is undercut by the creek, creating a high unstable slope. This reach terminates in an 8-foot-high knickpoint suggesting that the channel is currently eroding the bed sediment deposited in the 2004–05 floods (Final EIS/EIR, **Appendix 4.2**).

The lower portion of the Lion Canyon channel is heavily eroded and the floodplain is disconnected and eroded. Upstream, the channel is relatively stable and well vegetated. The channel is maintaining a relatively steep gradient for a watershed of this size and with a sand bed. One reason for this is the high sediment delivery rate. The principal sediment source appears to be bed and bank erosion of the channel in the lower reaches, and a combination of channel and headwall erosion in the upper reaches. The eroding gullies that extend up into the canyon walls in many locations are an additional source of sediment. Generally, the existing geomorphic conditions in Lion Canyon are unstable and channel degradation is ongoing due to excessive erosion and headcutting below existing road crossings.

The modeling of the existing floodplain performed by PACE (2008B) indicated that approximately 50 percent of the lower reach of the Lion Canyon floodplain was hydraulically "steep," (Froude numbers greater than a value of 1.0 which indicates supercritical flow conditions) while the remainder of the canyon, primarily the upper portion of the RMDP area boundary, was a hydraulically "mild" channel (Froude numbers less than a value of 1.0 which indicates subcritical flow conditions). The average overall mean slope of the channel from the upper head waters to the canyon mouth is 4.6 percent. (PACE, 2007)

Long Canyon. Long Canyon has a watershed area of 2.0 square miles at the downstream project limit and drains westerly into the south bank of the Santa Clara River. The watershed is currently used for a combination of cattle grazing and oil production. Long Canyon is characterized by a very steep, unstable headwaters reach (outside the Project area) that becomes aggradational downstream. Most of the canyon is then moderately aggradational to moderately stable with some sections of wide floodplain, before passing

through a culvert and into a constructed earth channel (agricultural ditch) that conveys it to the Santa Clara River. The upstream headwaters reaches are deeply incised and highly unstable, with actively eroding channels and very high rates of sediment delivery. Downstream the channel gradient flattens and the excess sediment (presumed to be from the 2004–05 winter flows) has partially filled the channel. As the channel moves downstream, there are longer reaches of incision, but the most recent events filled in the low-flow channel and bed. The channel passes through a slightly incised reach with recent aggradation before entering a highly aggrading section. The channel then enters a confined reach indicating long-term channel incision but again with local bed aggradation and actively eroding relict terraces on the outside bend before emerging into another aggrading, unconfined reach with an extensive active floodplain. Downstream the channel is aggrading causing lateral migration into the dirt road creating access to a low floodplain on the opposite side. Further downstream the channel continues to aggrade with eroding outside bends adjacent to relict terraces. The channel passes through a short, relatively stable reach before widening and aggrading. Downstream the channel becomes slightly confined with a higher floodplain on one bank but evidence of aggradation from the proximity to the other floodplain level. Below this point the channel enters a constructed trapezoidal flood channel that conveys it to the Santa Clara River (Final EIS/EIR, **Appendix 4.2**). Generally, the existing geomorphic conditions in Long Canyon are unstable due to active erosion downstream of road crossings and lateral scour caused by inadequate channel capacity to transport heavy sediment loads.

The modeling of the existing floodplain performed by PACE (2008B) indicated that approximately 80 percent of the lower reach of the Long Canyon floodplain was hydraulically "steep," (Froude numbers greater than a value of 1.0 which indicates supercritical flow conditions) while the remainder of the canyon, primarily the upper portion of the Newhall Ranch boundary, was a hydraulically "mild" channel (Froude numbers less than a value of 1.0 which indicates subcritical flow conditions). The average overall slope of the channel from the upper headwaters to the canyon mouth is 3.0 percent. (PACE, 2008B; see **Appendix 4.1**.).

Potrero Canyon. Potrero Canyon has a watershed area of 4.7 square miles and drains westerly into the south bank of the Santa Clara River. The watershed is currently used for a combination of cultivated agriculture, cattle grazing and oil production. Potrero Canyon has steep headwaters with incised, erosive channels that deliver an abundance of relatively coarse sediment to a downstream braided reach. The upper canyon immediately downstream of the steep headwaters appears to be aggradational, as sediment delivery

exceeds transport capacity and the surplus sediment is stored in the channel. Downstream there is a short reach where the channel is confined against the valley side and is deeply incised with highly unstable banks. The channel downstream shows signs of previous incision, but there are indications of recent aggradation, partially filling the low flow channel with sediment, which is now being re-eroded and reworked; overall, this creates a highly complex pattern. Downstream, the channel has a long and unusual reach of cismontane alkali marsh much of which takes the form of a swale rather than a well-defined channel. Towards the downstream end, the channel becomes increasingly well defined, culminating in an unstable knickpoint that is migrating upstream. The channel transitions sharply into a steep, incised section with several knickpoints before emptying into the Santa Clara River. (Final EIS/EIR, **Appendix 4.2**). Generally, geomorphic conditions with Potrero Canyon are relatively unstable due to historic activities (channel re-alignment for agriculture, road crossings). In particular, the channel in the lower canyon is actively eroding and has become deeply incised. Heavy sediment loads in the upper reaches have resulted in lateral channel migration and bank scour. The active channel has limited hydraulic capacity, particularly in the lower portion of the canyon, which results in overtopping and the creation of a secondary sheet flow on the southern side of the canyon, supporting a large meadow area. The engineered portions of the active channel follow the canyon floor. The canyon floor is characterized by a very large and flat width in the valley compared to the other tributary canyon watersheds. The drainage characteristics and trends also reflect a wide, stable valley system, with little tendency to deeply incise beyond the minor active channel.

The modeling performed by PACE (2008B) indicated that approximately 40 percent of the lower reach of the existing Potrero Canyon floodplain was hydraulically "steep," (Froude numbers greater than a value of 1.0 which indicates supercritical flow conditions) while the remainder of the canyon, primarily the upper portion of the RMDP area boundary was a hydraulically "mild" channel (Froude numbers less than a value of 1.0 which indicates subcritical flow conditions). The average overall slope of the channel from the upper headwaters to the canyon mouth is approximately 3.1 percent. (PACE, 2008B; see Final EIS/EIR, **Appendix 4.1**.).

1.5 Jurisdictional Areas to be Filled

Based on the most recent data and field work available, the RMDP project area includes a total of 660.1 acres of waters of the United States, of which 276.9 acres are wetlands and 383.2 acres are non-wetland waters of the United States. The jurisdictional acreages are shown on Table 3, along with the acreage distribution for the largest drainages. Of the total Corps-jurisdictional

waters on the site, 471.2 acres (71%) comprise the Santa Clara River corridor, and the remaining portion represents tributaries to the Santa Clara River. The smallest, ephemeral drainages on site have been combined into a single heading ("Other Drainages within RMDP site") and have jurisdictional area totaling 34.4 acres (5% of total Corps-jurisdiction on the RMDP site). A preliminary jurisdictional determination also has been prepared and is included in **Appendix F4.6** of the Final EIS/EIR. The extent of Corps jurisdiction will be verified at the time a construction notification is submitted for a permitted activity.

Table 3
Area of Waters of the United States, Including Wetlands within the Project Area by Drainage

Drainage	Waters of the United States (excluding Wetlands) (acres)	Corps Wetlands (acres)	Total Waters of the United States (including Wetlands) (acres)
Santa Clara River	212.5[1]	258.8	471.2
Salt Creek	79.7	8.7	88.5
Potrero Canyon	31.4	7.3	38.7
San Martinez Grande Canyon	2.6	0.0	2.6
Chiquito Canyon	12.2	0.0	12.2
Long Canyon	5.7	0.0	5.7
Lion Canyon	6.9	0.0	6.9
Other Drainages Within RMDP site	32.3	2.1	34.4
Subtotal RMDP Site	**383.2**	**276.9**	**660.1**

[1] Data presented herein reflects geographic information system source data with very high data resolution. To facilitate the reader, values are rounded to the nearest 1/10 of an acre. Values reported as 0.0 may represent up to 0.0444 acre.
Source: URS (RMDP Waters/Streams 2004, RMDP Wetlands 2009; VCC Streams 2008, River Wetlands 2010); Glenn Lukos Associates (as revised September 15, 2008) (see **Appendix F4.6** of the Final EIS/EIR).

The extent of wetlands within the RMDP site was determined through a combination of fieldwork and analysis of high-resolution (6-inch pixels) aerial photography. On portions of the RMDP site not associated with the Santa Clara River main stem, field delineation techniques consistent with the Corps' Wetland Delineation Manual (Corps 1987) were used. Within the river main stem, where the extent of vegetated areas varies from year to year due to storm flows shaping the channel, Corps' 1987 field methods were employed only in the vicinity of proposed bridge crossings. In the remaining portions of the river main stem, delineation was performed based on aerial photography. A conservative approach was taken where aerial photography was used, and all vegetated areas within and adjacent to the active river channel were mapped as wetlands. This conservative approach, combined with the high resolution of the air photos used, ensured that small wetlands did not go undetected and that the extent of wetlands present was not underestimated.

Wetlands were identified within the Santa Clara River corridor and in the Potrero Canyon and Salt Creek tributaries, as well as in a spring near the mouth of Middle Canyon (identified in the Hybrid Assessment of Riparian Condition (HARC) as reach MI-6). In total, 276.9 acres of wetlands were mapped within the RMDP site. The vast majority of this total consisted of vegetated areas within the river floodplain. Although these areas met the Corps' criteria for jurisdictional wetlands, it is important to note that the river is a highly dynamic system, and the location and extent of vegetated areas that may constitute wetlands varies from year to year as seasonal flood events scour and shape the channel. The wetlands observed in Salt Creek, Potrero Canyon, and at the Middle Canyon spring complex are in areas with greater morphological stability and likely experience much more subtle changes in boundaries from year to year.

1.5.1 Hybrid Assessment of Riparian Condition (HARC)

The HARC method is a quantitative tool used to evaluate and characterize the functional quality of non-wetland waters of the United States, and riparian vegetation communities within the project site. The methodology was developed by URS Corporation (2007), in cooperation with the Corps, for the Santa Clara River basin. The HARC methodology adapts and combines elements from three widely used functional assessment methodologies: the California Rapid Assessment Methodology (Collins *et al.* 2008), the Hydrogeomorphic Classification (Smith *et al.* 1995), and the Landscape Level Functional Assessment (Smith 2000). The metric scores reflect the overall habitat, hydrologic, and biogeochemical functions of the riverine systems within the project area. The HARC method was developed specifically for the assessment of large sites within the Santa Clara River. The assessment methodology is explained in detail in **Section 4.2** of the Final EIS/EIR (Corps and CDFG 2010). Existing HARC scores for waters of the United States within the RMDP area are shown on Figure 5, Existing HARC Scores, and average-weighted (AW) HARC scores are summarized in Table 4. Pre-construction AW HARC scores will form the basis for determination of no net loss of functions and values through the evaluation process defined in **Section 7.0.**

Table 4
HARC Summary

Drainage	Corps' Jurisdiction Total Acreage	Total HARC AW Units	Avg. HARC Score
Santa Clara River Main Stem			
Santa Clara River	471.2	*364.8*	0.77
Tributaries			
Lion Canyon	6.9	*5.4*	0.79
Long Canyon	5.7	*3.6*	0.62

Table 4
HARC Summary

Drainage	Corps' Jurisdiction Total Acreage	Total HARC AW Units	Avg. HARC Score
Chiquito Canyon	12.2	*8.2*	0.67
Potrero Canyon	38.7	*31.6*	0.82
Salt Creek Canyon	88.5	*71.9*	0.81
San Martinez Grande Canyon	2.6	*2.1*	0.82
Agricultural Ditch	1.6	*0.2*	0.10
Ayers Canyon	2.6	*2.2*	0.85
Dead-End Canyon	1.3	*0.8*	0.60
Exxon Canyon	1.2	*1.0*	0.82
Homestead Canyon	0.2	*0.1*	0.59
Humble Canyon	1.9	*1.7*	0.90
Magic Mountain Canyon	6.4	*4.4*	0.68
Middle Canyon	5.7	*3.2*	0.56
Middle Canyon Spring Complex	2.1	*2.1*	1.00
Mid-Martinez Canyon	2.0	*0.9*	0.47
Off Haul Canyon	5.8	*2.7*	0.47
Unnamed Canyon 1	0.3	*0.1*	0.42
Unnamed Canyon 2	0.3	*0.1*	0.39
Unnamed Canyon A	0.8	*0.5*	0.60
Unnamed Canyon B	0.7	*0.6*	0.85
Unnamed Canyon C	0.7	*0.6*	0.85
Unnamed Canyon D	0.8	*0.7*	0.82
Tributary Totals	**188.9**	***144.6***	**0.77**
RMDP Project Area Total	**660.1**	***509.4***	**0.77**

Source: Final EIS/EIR (May 2010) **Appendix 4.6**. HARC scores are averaged for each reach of the entire length of each drainage within the RMDP.

1.5.2 Impacts to Waters of the United States

Implementation of the Project would result in permanent and temporary impacts to waters of the United States. Table 5 provides a summary of total acres of temporary and permanent impacts to Corps-jurisdictional area for all RMDP development projects. There are a total of 660.1 acres of Corps-jurisdictional area within the RMDP footprint (Figure 6, Waters of the United States within the RMDP Site; Figure 7, Proposed Land Uses and Jurisdictional Impacts.). The Project would result in permanent impacts to 5.1 acres of wetland waters of the United States and 42.8 acres of non-wetland waters of the United States (total 47.9 acres). The Project would result in temporary impacts to 11.8 acres of wetland waters of the United States and 23.5 acres of non-wetland waters of the United States (total 35.3 acres). Figure 8 depicts locations of modified, converted and preserved tributary drainages.

SOURCE UNSA ER 2 1 /PACE 2 1

FIGURE 5

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

EXISTING HARC SCORES

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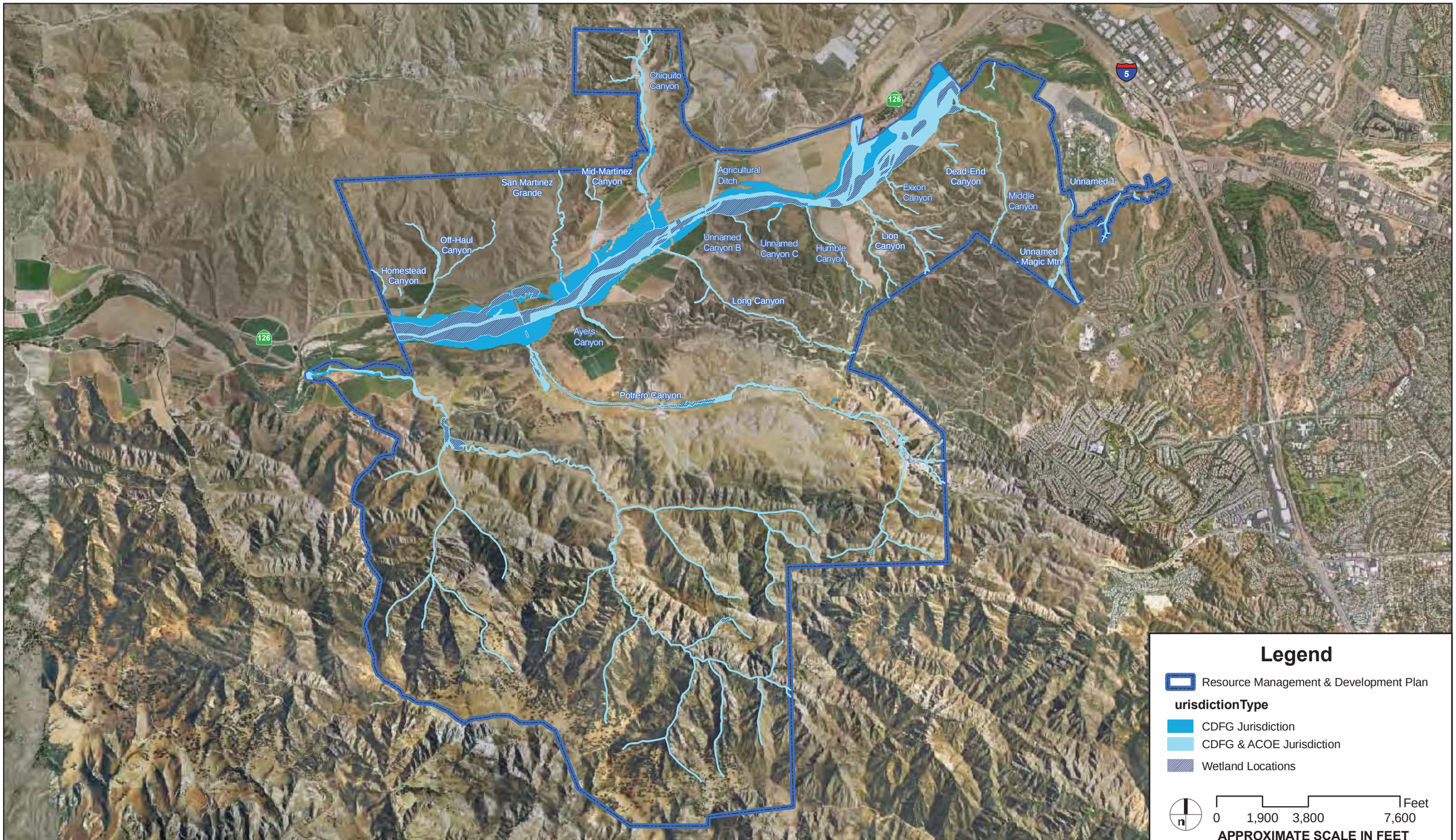

SOURCE UNSA ER 2 1 /PACE 2 1

FIGURE 6

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

Waters of the United States within the RMDP Site

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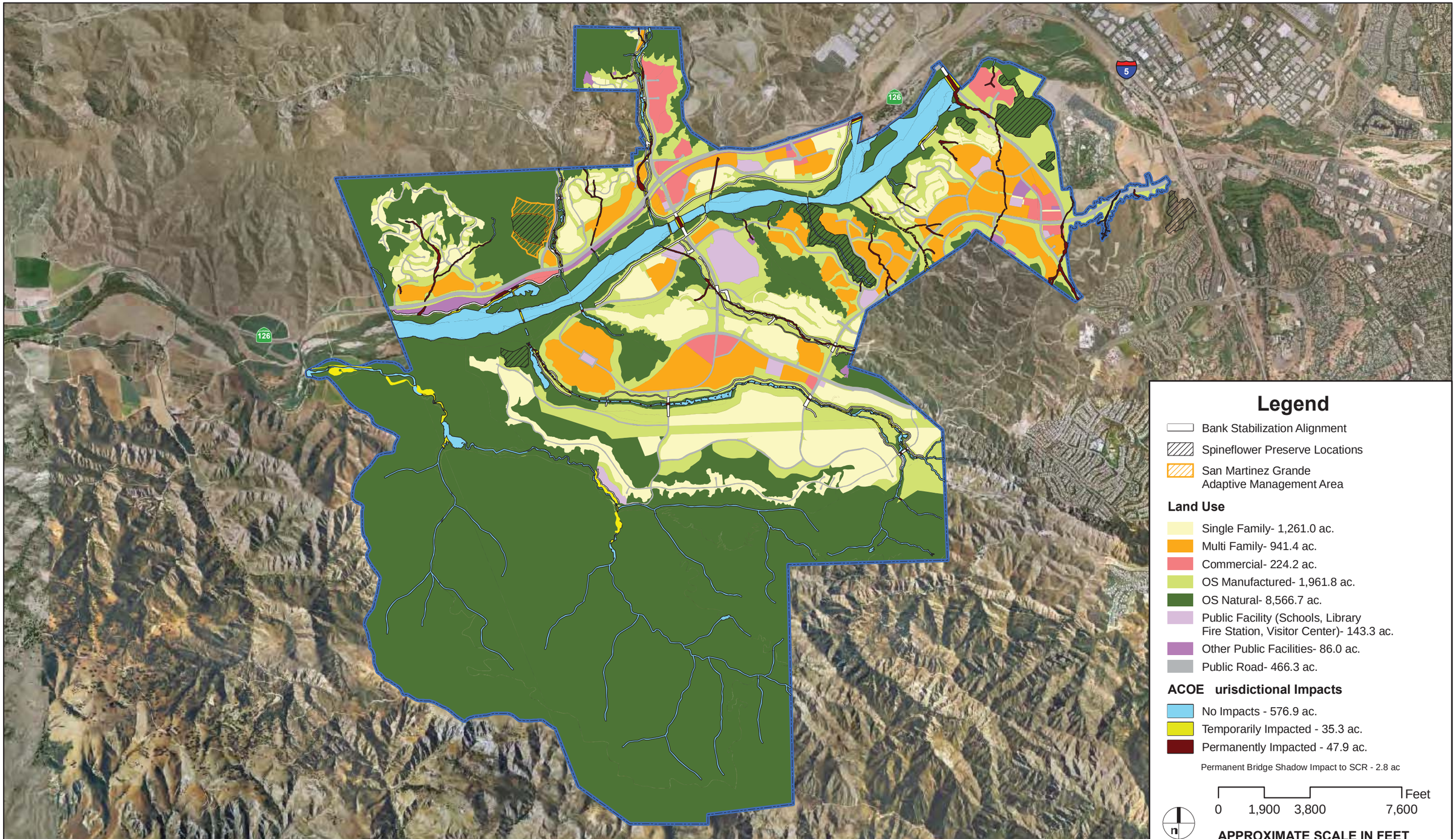

SOURCE UNSA ER 2 1 /PACE 2 1

FIGURE 7

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

Proposed Land Uses and urisdictional Impacts

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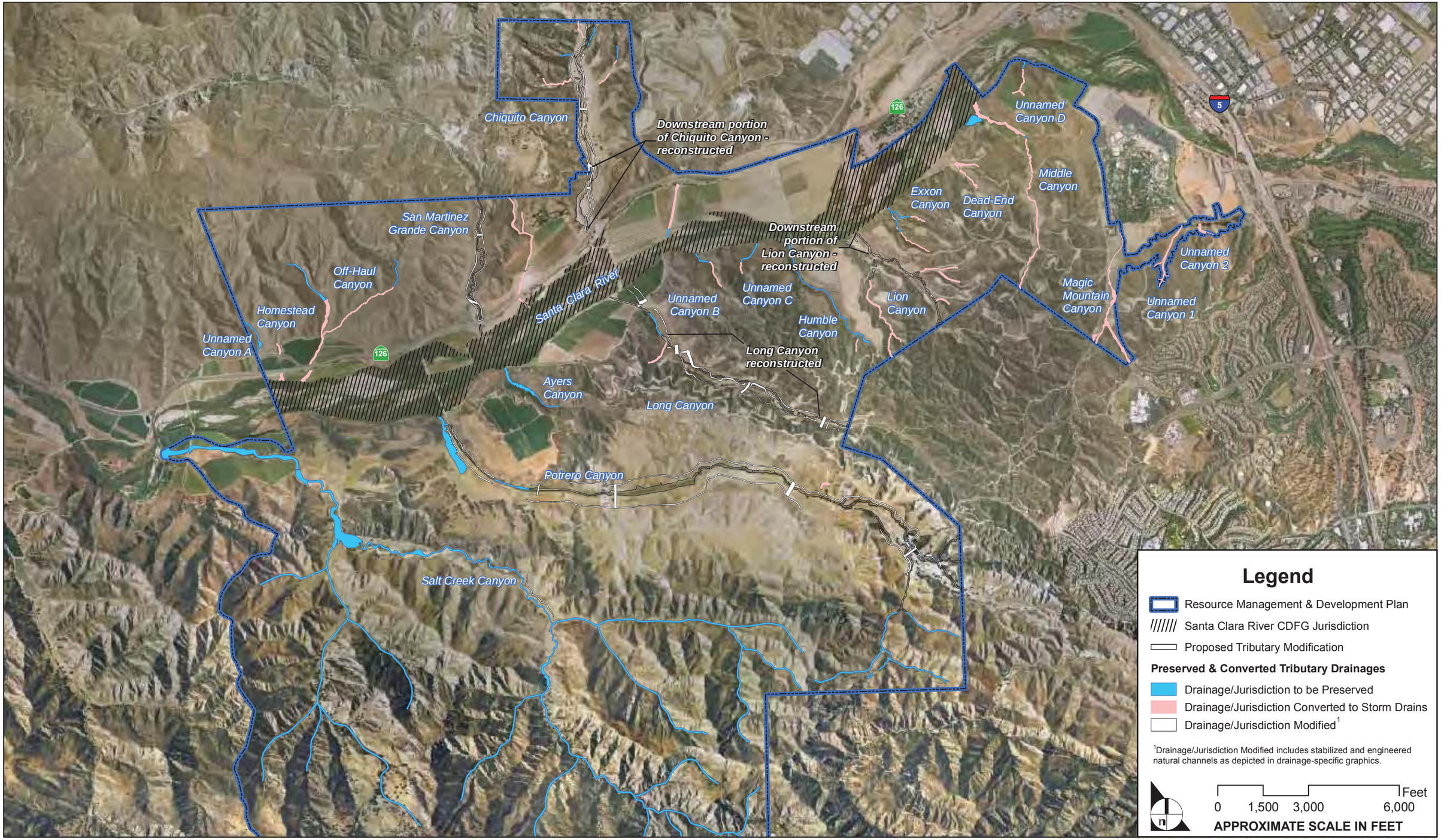

SOURCE PACE - 2 1

FIGURE 8

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

Modified, Converted, and Preserved Tributary Drainages

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Table 5
Summary of Corps Impacts by Jurisdictional Feature

Jurisdiction Name	Type of Impact	Waters of the U.S. (excluding Wetlands)	Wetlands	Total Waters of the U.S. (including wetlands)	Total Jurisdictional Area
		(acres)	*(acres)*	*(acres)*	*(acres)*
Agriculture Ditch	Waters Avoided	0.2	0.0	0.2	1.6
	Temporary Impact	0.1	0.0	0.1	—
	Permanent Impact	1.4	0.0	1.4	—
Ayres Canyon	Waters Avoided	2.4	0.0	2.4	2.6
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.2	0.0	0.2	—
Chiquito Canyon	Waters Avoided	4.2	0.0	4.2	12.2
	Temporary Impact	3.4	0.0	3.4	—
	Permanent Impact	4.7	0.0	4.7	—
Dead-End Canyon	Waters Avoided	0.0	0.0	0.0	1.3
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	1.3	0.0	1.3	—
Exxon Canyon	Waters Avoided	0.8	0.0	0.8	1.2
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.4	0.0	0.4	—
Homestead Canyon	Waters Avoided	0.0	0.0	0.0	0.2
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.2	0.0	0.2	—
Humble Canyon	Waters Avoided	1.8	0.0	1.8	1.9
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.1	0.0	0.1	—
Lion Canyon	Waters Avoided	0.0	0.0	0.0	6.9
	Temporary Impact	2.2	0.0	2.2	—
	Permanent Impact	4.7	0.0	4.7	—
Long Canyon	Waters Avoided	0.5	0.0	0.5	5.7
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	5.2	0.0	5.2	—
Magic Mountain Canyon	Waters Avoided	0.0	0.0	0.0	6.4
	Temporary Impact	0.0	0.0	0.0	—

Table 5
Summary of Corps Impacts by Jurisdictional Feature

Jurisdiction Name	Type of Impact	Waters of the U.S. (excluding Wetlands)	Wetlands	Total Waters of the U.S. (including wetlands)	Total Jurisdictional Area
		(acres)	*(acres)*	*(acres)*	*(acres)*
	Permanent Impact	6.4	0.0	6.4	—
Middle Canyon	Waters Avoided	0.1	2.1	2.2	7.8
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	5.6	0.0	5.6	—
Mid-Martinez Canyon	Waters Avoided	0.0	0.0	0.0	2.0
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	2.0	0.0	2.0	—
Off-Haul Canyon	Waters Avoided	0.3	0.0	0.3	5.8
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	5.5	0.0	5.5	—
Potrero Canyon	Waters Avoided	25.8	5.2	31.0	38.7
	Temporary Impact	4.1	1.6	5.7	—
	Permanent Impact	1.6	0.5	2.1	—
Salt Creek Canyon	Waters Avoided	73.4	7.6	81.0	88.5
	Temporary Impact	6.1	1.1	7.3	—
	Permanent Impact	0.2	0.0	0.2	—
San Martinez Canyon	Waters Avoided	1.3	0.0	1.3	2.6
	Temporary Impact	1.1	0.0	1.1	—
	Permanent Impact	0.2	0.0	0.2	—
Santa Clara River	Waters Avoided	204.6	245.1	449.7	471.2
	Temporary Impact	6.7	9.0	15.7	—
	Permanent Impact	1.2	4.6	5.8	—
Unnamed Drainage A	Waters Avoided	0.8	0.0	0.8	0.8
(Homestead East)	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.0	0.0	0.0	—
Unnamed Drainage B	Waters Avoided	0.3	0.0	0.3	0.7
(Homestead Village West)	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.5	0.0	0.5	—
Unnamed Drainage C	Waters Avoided	0.5	0.0	0.5	0.7

Table 5
Summary of Corps Impacts by Jurisdictional Feature

Jurisdiction Name	Type of Impact	Waters of the U.S. (excluding Wetlands)	Wetlands	Total Waters of the U.S. (including wetlands)	Total Jurisdictional Area
		(acres)	*(acres)*	*(acres)*	*(acres)*
(Homestead Village West)	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.2	0.0	0.2	—
Unnamed Drainage D	Waters Avoided	0.1	0.0	0.1	0.8
(Mission Village)	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.7	0.0	0.7	—
Unnamed Drainage 1	Waters Avoided	0.0	0.0	0.0	0.3
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.3	0.0	0.3	—
Unnamed Drainage 2	Waters Avoided	0.0	0.0	0.0	0.3
	Temporary Impact	0.0	0.0	0.0	—
	Permanent Impact	0.3	0.0	0.3	—
Total Waters Avoided	**—**	**317.6**	**259.3**	**576.9**	**660.1**
Total Temporary Impact	**—**	**23.5**	**11.8**	**35.3**	**—**
Total Permanent Impact	**—**	**42.8**	**5.1**	**47.9**	**—**
Combined Totals	**—**	**384.0**	**276.2**	**660.1**	**—**

Note: Totals may not add due to rounding.

1.5.3 Functions and Services Impacts

HARC units have been calculated for each jurisdictional area to be impacted on the river and tributaries based on average-weighted HARC values for each jurisdictional area (Table 6). The eliminated HARC units establish the minimum mitigation goal of the overall mitigation program proposed for the RMDP through Construction Notification packages.

Table 6
HARC Unit Impacts

Jurisdiction Name	Permanent Impact Acres	HARC AW Units Eliminated
Santa Clara River	5.79	4.41
Chiquito Canyon	4.70	3.04
Lion Canyon	4.69	3.75

Table 6
HARC Unit Impacts

Jurisdiction Name	Permanent Impact Acres	HARC AW Units Eliminated
Long Canyon	5.24	3.29
San Martinez Canyon	0.22	0.17
Potrero Canyon	2.06	1.55
Salt Creek Canyon	0.23	0.18
Agriculture Ditch	1.37	0.13
Ayers Canyon	0.16	0.13
Dead-End Canyon	1.30	0.78
Exxon Canyon	0.44	0.36
Homestead Canyon	0.22	0.13
Humble Canyon	0.14	0.13
Magic Mountain Canyon	6.37	4.47
Middle Canyon	5.60	3.15
Mid-Martinez Canyon	1.96	0.93
Off-Haul Canyon	5.46	2.53
Unnamed Creek B	0.45	0.38
Unnamed Creek C	0.18	0.15
Unnamed Creek D	0.69	0.57
Unnamed-1	0.33	0.14
Unnamed-2	0.33	0.13
Total Permanent Impact – Tributaries	**42.1**	**26.1**
Total Permanent Impact – Combined River and Tributary	**47.9**	**30.5**

1.5.4 Impacts to Vegetation Communities

Implementation of the Project would result in permanent and temporary impacts as depicted in Figure 7, Proposed Land Uses and Jurisdictional Impacts. The Project would result in temporary and permanent impacts to Corps-jurisdictional areas that support southern cottonwood–willow riparian forest, herbaceous wetlands (freshwater marsh and bulrush-cattail wetland), arrow weed scrub, mulefat scrub, river wash, alluvial scrub, big sagebrush scrub, cismontane alkali marsh, southern coast live oak riparian forest, southern willow scrub, tamarisk scrub, and Mexican elderberry scrub.

1.6 Type(s), Functions, and Values of the Jurisdictional Areas to be Directly and Indirectly Impacted

Existing functions and values of jurisdictional features throughout the project area were quantitatively evaluated using the HARC methodology. The HARC assessment methodology was described briefly in **Subsection 1.5.1**, and HARC scores for jurisdictional features within the project area are represented on Figure 5.

Existing functions and values of the planned locations for the compensatory mitigation sites vary considerably depending on location. In general, the existing functions and values of the planned mitigation sites associated with the Santa Clara River (e.g., Mayo Crossing and Landmark Village establishment areas) are very limited due to the existing intensive agricultural land use that occurs there. Due to the repeated and frequent land disturbance practices associated with intensive agricultural use, the areas lack functions and values that would benefit the Santa Clara River riparian system, such as native buffers, floodplain connectivity, and surface water persistence and recharge.

The tributary canyons currently provide some of the functions and values typical of intermittent and ephemeral drainages, such as riparian corridor connectivity, a natural water source, a natural flood-prone area, and biogeochemical processing. However, many of the canyon drainage channels are excessively incised due to instable substrate, limiting floodplain connectivity. Many of the tributary drainages also have poor buffer conditions in the lower reaches due to intensive agricultural use along the Santa Clara River corridor.

1.6.1 Vegetation Communities

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. Many of the vegetated jurisdictional communities that would be impacted by the Project have been subject to some disturbance from grazing activities, agricultural activities, and oil extraction activities; however, these jurisdictional vegetated communities generally support the functions and values typical of natural vegetated wetland and riparian communities, such as dissipation of energy, cycling of nutrients, uptake of elements and compounds, retention of particulates, export of organic carbon, and maintenance of plant and animal communities (e.g., nesting, feeding, and breeding opportunities for various aquatic, terrestrial, and avian animals).

An overview of the vegetation communities within Corps' jurisdiction that would be impacted by the Project is provided below.

Southern Cottonwood-Willow Riparian Forest

The southern cottonwood–willow riparian forest within Corps' jurisdiction that would 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 (*Artemisia douglasiana*), California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), golden currant (*Ribes aureum*), and wild cucumber (*Marah macrocarpus*). In all strata, understory through canopy, native vegetation covers almost 70% of the vegetation community.

The southern cottonwood–willow riparian forest vegetation community is found primarily in patches along the margins of the Santa Clara River in locations where there is adequate surface and subsurface water year-round. There are a few patches of this vegetation community in some of the lower (downstream) reaches of the tributary canyons (e.g., Middle Canyon). The functions of the southern cottonwood–willow riparian forest include enhanced 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.

Mulefat Scrub

The mulefat scrub vegetation community within Corps' jurisdiction that would 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 sometimes a few riparian trees growing above the shrub layer. Other native species occur, but the variety and quantity are typically poor.

The mulefat vegetation community commonly occurs throughout the Project area along stream margins and floodplains. Mulefat scrub provides some breeding, feeding, and nesting habitat for avian, aquatic, and terrestrial animal species.

Arrow Weed Scrub

The arrow weed scrub community within Corps' jurisdiction is dominated by shrubs and understory species. There is no vegetation reaching into the canopy layer. Predominant non-native species include mustard and annual grasses, contributing to approximately 25% of the vegetated cover within the community. The arrow weed scrub is dominated by a small number of

species, mainly arrow weed (*Pluchea sericea*), California sagebrush (*Artemisia californica*), and mustard. Arrow weed scrub provides some breeding, feeding, and nesting habitat for avian, aquatic, and terrestrial animal species.

River Wash

The river wash community within Corps' jurisdiction is predominantly flat and homogeneous. There are some microtopographic features, including meanders, bars, terraces, pits, ponds, and hummocks. On average, this community supports less than 5% vegetative cover. The vegetation surrounding the river wash is often diverse, containing both native and exotic plant vegetation. The river wash community provides area for river movement and meander; space for flood waters; and some habitat for avian, aquatic, and terrestrial animal species.

Cismontane Alkali Marsh

The cismontane alkali marsh within Corps' jurisdiction that would be impacted is predominantly flat and homogeneous. Cismontane alkali marsh is an herbaceous community dominated by salt grass (*Distichlis spicata*); the higher elevations and edges support native plants (e.g., yerba mansa (*Anemopsis californica*), western ragweed (*Ambrosia psilostachya*), and spearscale (*Atriplex triangularis*)) and non-native plants (e.g., sourclover (*Melilotus indica*), five-hooked bassia (*Bassia hyssopifolia*), and peppergrass (*Lepidium latifolium*)). Where water is actually flowing in small rills at the surface, winged three-square (*Scirpus americanus*) and Mexican rush (*Juncus mexicanus*) also occur. Cismontane alkali marsh provides foraging habitat for avian, aquatic, and terrestrial animal species.

Herbaceous Wetlands

The herbaceous wetlands that would be impacted include freshwater marsh and bulrush-cattail wetlands. The herbaceous wetlands on site occupy depressional areas where sufficient groundwater exists. These areas are in association with stream channels and ditches. Vegetation consists of occasional native shrubs, including mulefat, narrow-leaved willow (*Salix exigua*) arrow weed; native herbaceous species, such as broad-leaved cattail (*Typha latifolia)*, sedges (*Carex* spp.), cocklebur (*Xanthium strumarium*), California cottonweed (*Epilobium ciliatum*), and bulrush (*Scirpus* ssp.); and non-native plants, including whorled dock (*Rumex conglomerates*), curly dock (*Rumex crispus*), and pepperweed. Herbaceous wetlands provide habitat for aquatic invertebrates (when sufficient surface water is present), insects, as well as foraging and feeding habitat for terrestrial and avian species.

Alluvial Scrub

The alluvial scrub within Corps' jurisdiction that would be impacted occurs along stream channels on terraced benches of varying elevations above the channel bottom, which receive less frequent inundation. Vegetation is dominated by California buckwheat, yerba santa, scale broom (*Lepidospartum squamatum*), and cudweed aster (*Lessingia* sp.). This vegetation community is adapted to flash floods, erosion, and dry summer periods. Its footprint has been greatly reduced over time in southern California due to sand mining and urbanization. Alluvial scrub provides foraging habitat for avian and terrestrial animal species and flood retention.

Big Sagebrush Scrub

The big sagebrush scrub within Corps' jurisdiction that would be impacted includes native shrubs (e.g., Great Basin sagebrush, yerba santa, and California sagebrush); herbaceous species, including native plants (e.g., California aster (*Lessingia filaginifolia*), wild cucumber, shrubby phacelia (*Phacelia ramosissima*), and common owl's clover (*Castilleja exserta*)); and non-native herbs (e.g., red-stemmed filaree (*Erodium cicutarium*), tree tobacco (*Nicotiana glauca*), milk thistle (*Silybum marianum*), and horehound (*Marrubium vulgare*)). This vegetation community can occur in a variety of site conditions ranging from rocky, well-drained soils to fine, sandy soils with a higher water table. It can tolerate a variety of temperature ranges and elevations. Big sagebrush scrub provides breeding, feeding, and foraging habitat for terrestrial and avian wildlife species.

Southern Willow Scrub

The southern willow scrub within Corps' jurisdiction that would be impacted includes red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and Goodding's black willow (*Salix gooddingii*) trees; native shrubs, including mulefat, narrow-leaved willow, and arrow weed; native herbaceous species, including western ragweed, arroyo lupine (*Lupinus succulentus*), yellow fiddleneck (*Amsinckia menziesii* var. *intermedia; Amsinckia menziesii* var. *intermedia*) , and caterpillar phacelia (*Phacelia cicutaria* var. *hispida*); and non-native plants (white sweet-clover (*Melilotus alba*), tumble mustard (*Sisymbrium altissimum*), hedge mustard (*Sisymbrium officinale*), and milk thistle). Southern willow scrub occurs in depositional areas of floodplains and along stream channels with a shallow water table, where repeated flooding occurs. Willow species form thick canopies, with an increasingly sparse understory as canopy densities increase. Southern willow scrub provides breeding, feeding, nesting, and foraging habitat to aquatic (when surface water is present), amphibian, insect, avian, and terrestrial wildlife species. Song birds utilize the willow canopy for roosting and nesting habitat.

Southern Coast Live Oak Riparian Forest

The southern coast live oak riparian forest that would be impacted within Corps' jurisdiction impacted is dominated by coast live oak (*Quercus agrifolia*) with sparse understory of forbes and non-native grasses. It occurs in bottomlands, canyons, and outer floodplains along larger streams, on fine-grained, rich alluvium. Southern coast live oak riparian forest provides nesting, feeding, breeding, and foraging habitat for avian and terrestrial wildlife species.

Mexican Elderberry Scrub

The Mexican elderberry scrub within Corps' jurisdiction that would be impacted is dominated by Mexican elderberry (*Sambucus mexicana*), California sagebrush, bush monkeyflower (*Mimulus aurantiacus*), shrubby phacelia, golden currant, caterpillar phacelia, and wild cucumber. It occurs on north-facing slopes, sometimes along drainage channels. Mexican elderberry scrub provides nesting, feeding, breeding, and foraging habitat for avian and terrestrial wildlife species.

1.6.2 Hydrologic Regime

The vegetated and unvegetated stream channels that are associated with tributary drainages typically convey stormwater flow only during precipitation events and for a short period after (usually less than 24 hours). They are generally composed of a coarse sandy, alluvial bottom, often with steep side banks. These tributary stream channels provide storm flow conveyance, surface water storage, subsurface water storage, and moderation of groundwater flow or discharge. However, because the channels are mostly unvegetated, they provide very minimal biotic functions and values for plants and wildlife.

In some instances, tributary channels are incised, hydraulically isolating the drainage channel from the historic valley floodplain. Channel incisement can be generally attributed to past land uses such as oil extraction access road crossings, agriculture, and grazing that alter flow gradients to erosive velocities, causing bed instability and degradation. These conditions reduce hydraulic functions such as groundwater recharge, soil moisture replenishment, and vegetation support. Vegetation recruitment is limited by high-velocity flow that scours streambeds, removing fine bedload materials that have higher moisture-retaining properties. Coarse-grained bed material has high porosity and percolation causing soil surfaces to quickly dry, thereby limiting seed germination opportunities.

Within the Santa Clara River, hydraulic effects of high-velocity flow are more localized within the broader floodway. This allows migration of season flow channels within the larger floodway, resulting in a greater diversity of bed grain size distribution. Fluvial features such as sandbars,

cut banks, and multiple-year secondary channels result in a variety of soil and moisture conditions that express equally diverse vegetation communities.

1.6.3 Topographic Complexity

Topographic diversity in tributary drainages can be very subtle and diverse, as observed in Potrero Canyon jurisdictional areas, or limited where incised channels or pastureland grazing are present. Along the Santa Clara River, high topographic diversity that is created by the hydrologic regime, as described above, affects moisture regimes, and frequency of flood scour that give rise to different vegetation community types.

1.6.4 Biochemical Processes

In areas where incised channels are present, biochemical processes in the tributary drainages are limited by a general lack of vegetation cover, woody debris, leaf litter, or detritus. The cause of this condition is described above and generally relates to the combined effects of hydrology, bed material, and lack of topographic complexity. In channel sections without scour, biochemical functions still remain low due to land uses that have reduced adjacent uplands and riparian vegetation either through direct removal (pastureland/grazing) or through hydraulic modifications. This limits the availability of woody materials that persist in channel areas. Conversely, grasses degrade rapidly and degrade water quality, unlike woody materials that decompose slowly and promote beneficial biochemical functions.

Biochemical function in the Santa Clara River is relatively high compared to tributary drainages. Vegetation diversity, hydrologic regime, and topographic complexity combine to trap and retain woody debris, leaf litter, and debris within the floodway. These materials promote beneficial biochemical processes and provide diverse resources for invertebrate populations.

2.0 GOALS OF THE COMPENSATORY MITIGATION PROJECT

This Plan provides a framework mitigation document that guides mitigation planning and implementation through all RMDP phases. The primary goal of the mitigation project is to ensure that there is no net loss of acreage or functions/values from implementation of the RMDP. The permanent removal of existing habitats in Corps-jurisdictional areas in the Santa Clara River and tributaries will be replaced by enhancing, creating and restoring Corps-jurisdictional habitats of similar functions and values. Temporary impacts to Corps-jurisdictional areas will be mitigated by restoring the affected areas to the habitat type present prior to impacts.

As individual Project components are proposed for construction, consistent with the construction notification process, quantities of mitigation acreage required for impacts to Corps-jurisdictional areas will be calculated in accordance with the requirements outlined in this Plan. Assuming full build out, Newhall will create at least 132.2 acres of compensatory mitigation, of which at least 35.2 acres would be wetlands. In addition, Newhall will restore 35.3 acres of temporarily impacted waters of the United States, including 11.8 acres of wetlands.

The design intent will be to enhance/create/replace vegetation communities in Corps-jurisdictional areas that are consistent with adjacent existing riparian vegetation communities and compatible with the fluvial morphology and hydrology of the stream channel corridor. The design will also focus on restoring the floodplain functions and services/values lost during project construction. The restoration approach will be to create vegetation communities that are self-sustaining and functional beyond the maintenance and monitoring period.

2.1 Mitigation Requirements

Consistent with Corps Guidance, including Regulatory Guidance Letter No. 02-2 (Dec. 24, 2002) and the Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (Feb. 6, 1990), the mitigation requirements in this Plan are designed to compensate for the loss of jurisdictional areas authorized under the Corps Permit so as to ensure no net loss of acreage and of functions and services. The primary mechanisms for mitigating the loss of jurisdictional areas are establishment, restoration and enhancement. For purposes of this Plan, “establishment” is defined as conversion of existing upland areas to Corps’ jurisdiction (either ordinary high water mark or wetlands). “Restoration” is defined as the managed replacement of degraded stream and wetland habitats (either from natural geomorphic process or more anthropogenic effects) to their prior undisturbed and/or stable condition, usually through recontouring of banks, control of streambed geomorphological processes, and

establishment of appropriate native habitats. "Enhancement" is defined as the removal of invasive plant species from existing jurisdictional areas and/or the establishment of native habitats where non-native species have colonized.

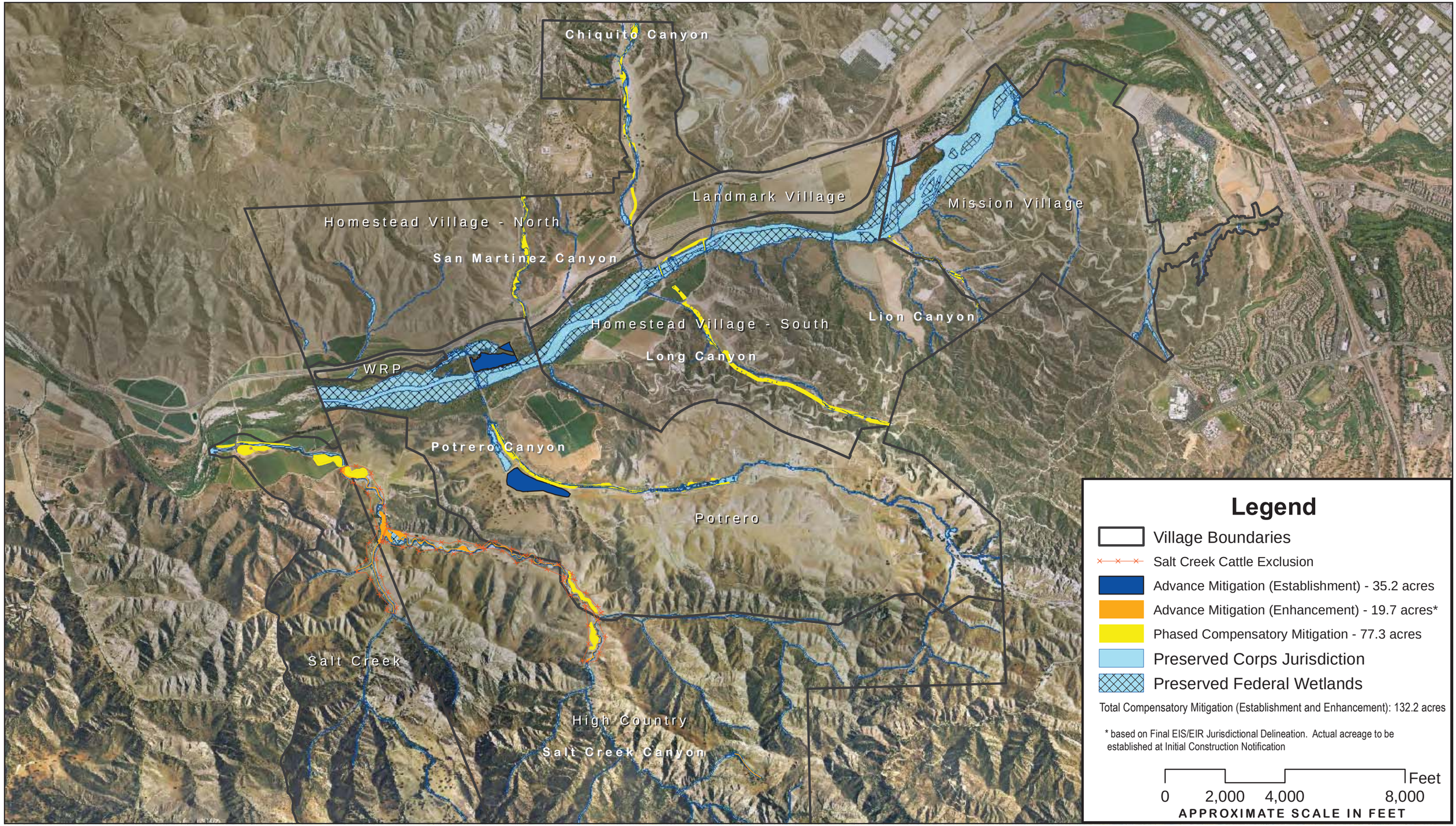
As compensation for RMDP impacts, the Project will:

A. Preserve and protect in perpetuity 612.2 acres of waters that are not permanently impacted, including 271.8 acres of wetlands. These areas will be protected by a conservation easement or deed restriction and will be managed under an endowed long-term management plan. The ratio of preserved acres to permanently impacted waters is **12.8 to 1,** and **53.3 to 1** for impacted wetlands.

B. Enhance, restore and create 132.2 acres of waters of the United States, including 94.3 non-wetland acres in tributaries to the Santa Clara River and 35.2 acres of wetlands at Mayo Crossing (river) and at Potrero Canyon (tributary) (Figure 9). The 94.3 acres of enhanced, restored and created tributaries will be distributed in Salt Canyon (38.2 acres – 19.7 enhanced only), Long Canyon (23.4 acres), San Martinez Grande Canyon (6.8 acres), Chiquito Canyon (9.8 acres), Potrero Canyon (14 acres) and Lion Canyon (2.1 acres) as shown below. Of the 35.2 acres of jurisdictional establishment, 18.6 acres will be adjacent to the Santa Clara River and 19.3 acres will be adjacent to Potrero Creek. Overall, non-wetland impacts to tributaries will be mitigated at a **2.26 to 1** ratio in acres (excluding wetland mitigation) and impacts to site-wide wetlands will be mitigated at a **6.9 to 1** ratio in acres. Overall functions and values will exceed pre-project conditions.

C. Protect all mitigation areas in perpetuity by conservation easements or deed restrictions, including maintenance under a long term management plan supported by an endowment.

D. Restore all temporary impacts by restoring those areas with appropriate native vegetation after construction is complete in the area.



SOURCE Newhall Land, 2 11

FIGURE 9

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Establishment and Enhancement Mitigation Sites

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To verify that impacted functions and services will be adequately replaced, HARC units have been calculated for RMDP impacts (Table 6). The anticipated project wide impacts on a HARC unit basis is 30.5 average-weighted (AW) units. HARC AW units for each of the proposed mitigation sites have been estimated based on anticipated conditions related to HARC metrics (Table 7). Upon completion of all mitigation sites, there is anticipated to be 74.6 HARC AW units provided by the cumulative mitigation program. On a functions and services basis, project impacts will be mitigated at a 2.45:1 ratio. Verification of compensatory mitigation on a functions and services basis will be provided when all mitigation sites are complete (Section 7.0).

Table 7
Summary of Mitigation Sites

Mitigation Site	Description / Location	Mitigation Acreage	Mitigation Site Estimated HARC Total Score	HARC AW Units (Estimated)	Timing
Mayo Crossing	Ag field conversion to wetlands and riparian habitats along Santa Clara River	15.9	0.8	12.7	Implemented prior to RMDP Jurisdictional Impacts
Potrero Canyon CAM	Ag field conversion to wetlands, upstream of existing lower Potrero CAM	19.3	0.8	15.2	Implemented prior to RMDP Jurisdictional Impacts
Salt Creek Cattle Exclusion/Enhancement	Cattle exclusion (fencing) and enhancement (stabilization, exotic / invasive species control, revegetation)of existing jurisdiction	19.7	0.1	2.0	Implemented prior to RMDP Jurisdictional Impacts
Santa Clara River at Long Canyon Bridge	Santa Clara River WOUS/Wetlands Establishment along the banks upstream and downstream of the Long Canyon Bridge north abutment	2.7	0.8	2.2	Implemented at the completion of the Long Canyon Bridge construction
Salt Creek Enhancement/ Establishment	Corps jurisdiction establishment thru grading, geomorphic controls, enhancement, and revegetation along existing Salt Creek jurisdiction	18.5	0.4	7.5	Implemented prior to, or concurrent with, Mission Village Tract Map jurisdictional impacts
Lion Canyon	Corps jurisdiction establishment thru grading, geomorphic controls, enhancement, and, revegetation along, or near, existing Lion	2.1	0.6	1.3	Implemented at the completion of Mission Village Tract Map grading in

Table 7
Summary of Mitigation Sites

Mitigation Site	Description / Location	Mitigation Acreage	Mitigation Site Estimated HARC Total Score	HARC AW Units (Estimated)	Timing
	Canyon jurisdiction				Lion Canyon
Long Canyon	Reconstruction / Restored Long Canyon Drainage	23.4	0.6	14.0	Implemented at the completion of Homestead South Village Tract Map grading in Long Canyon
Chiquito Canyon	Corps jurisdiction establishment thru grading, geomorphic controls, enhancement, and, revegetation along existing Chiquito Canyon jurisdiction	9.8	0.6	5.9	Implemented at the completion of Homestead North Village Tract Map grading in Chiquito Canyon
San Martinez Grande	Corps jurisdiction establishment thru grading, geomorphic controls, enhancement, and, revegetation along existing San Martinez Grande Canyon jurisdiction	6.8	0.6	4.1	Implemented at the completion of Homestead North Village Tract Map grading in San Martinez Grande Canyon
Potrero Canyon	Corps jurisdiction establishment thru grading, geomorphic controls, enhancement, and, revegetation along existing Potrero Canyon jurisdiction	14	0.7	9.8	Implemented at the completion of Potrero Village Tract Map grading in Potrero Canyon
	Totals Mitigation Acreage	**132.2**	**0.6**	**74.6**	

2.2 Functions and Services of Proposed Mitigation

As explained above, mitigation areas are required to replace the functions and values of the Corps-jurisdictional areas that are permanently and temporarily impacted. Mitigation sites will be designed to develop vegetation composition and structure that would be expected to be supported by different jurisdictional areas on the river and tributaries.

Mitigation for jurisdictional areas permanently impacted by the RMDP would generally be designed to include a traditional establishment approach involving grading and site preparation, seeding, container plant installation, and installation of a temporary irrigation system. Vegetation communities temporarily impacted by the RMDP would be restored through a combination of passive restoration and varying levels of active restoration, depending on the site conditions. If the project biologist determines that observed passive restoration on a restoration area is insufficient to eventually reach performance goals after the first year, recommendations will be made to approach the restoration in accordance with the methods designed for permanent impacts (i.e., seeding, container plants, and/or a temporary irrigation system may be recommended). Areas temporarily disturbed by construction activities shall also be maintained annually, as needed, for 5 years following construction. These areas shall be monitored annually for 5 years after construction in order to document functions and services establishment.

There is a potential loss of jurisdictional functionality where restoration sites are located in close proximity to future development. This potential loss is almost completely related to loss of buffer quality and functions. In such cases, excess HARC AW units generated on other restoration (temporary impact) areas are anticipated to mitigate these losses. Appendix C provides a canyon by canyon analysis of HARC AW units associated with functional loss due to development for avoided wetlands, temporarily, and permanent impacts. These AW unit losses are compared with AW units anticipated to be generated by restoration of the temporary impact sites. This analysis demonstrates how jurisdictional functions and services will be adequately mitigated for the RMDP.

2.2.1 Santa Clara River

Within the Santa Clara River mainstem channel, mitigation will be implemented through jurisdictional establishment, restoration of temporary impacts, and enhancement of existing degraded riparian vegetation communities.

Establishment mitigation is planned at the Mayo Crossing where an agricultural field will be graded to river floodway elevations to expand the jurisdictional area. The functional lift created by the project will provide beneficial effects for hydrology, soils, and vegetation functions and

services. The HARC units generated by this project (Table 7) will be used to mitigate permanent jurisdictional impacts (Table 6) on a functions and services basis.

Temporary impact areas will be restored to provide similar functions and services as those impacted. Post-construction recontouring will re-establish pre-construction topography and hydraulic functions to support the vegetation communities that were impacted. Restoration areas are surrounded by undisturbed riparian vegetation communities that will support restoration projects through seed and propagules dispersal into the mitigation area, thus increasing native recruitment.

Enhancement areas are intended to remove dense stands of non-native, invasive species and re-establish native riparian vegetation. Enhancement mitigation will benefit all existing riparian communities and mitigation projects in the RMDP through removal of source exotic vegetation that would otherwise recruit into and diminish the functions and services of the native riparian vegetation. These enhancement efforts will increase functions and services of existing riparian vegetation communities. HARC AW units have not been estimated for enhancement activities, but will further mitigate function and services impacts on the river.

2.2.2 Tributary Drainages

Within the tributary drainages in the RMDP, certain drainages would remain undisturbed, while other drainage areas would be graded, reconstructed to a soft-bottom drainage channel with buried bank stabilization along each side of the drainage, or converted to a buried storm drain. Reconstructed drainage areas would integrate flood control, grade-stabilizing measures (i.e., a combination of drop structures/grade stabilizers and bank stabilization), and appropriate native vegetation communities to maintain sediment equilibrium and protect the channel bed and banks from hydromodification impacts. Other functions and services such as floodplain connection, surface water storage, floodprone area, and topographic complexity are expected to increase with the proposed channel design.

This design methodology is intended to create stable drainage channels that would support in-channel native vegetation communities following construction. The approach focuses on developing channel width, depth, slope, and other parameters based on the future flow and sediment regime of each drainage, using an integrated approach that predicts stable characteristics and that uses structures and other measures only in those drainage locations where erosional forces would exceed the natural stability of the drainage channel. All such structures (i.e., bank and channel bed stabilization) are designed to mimic natural features and use a combination of structural and vegetative methods to provide drainage channels that are stable and visually aesthetic, and that provide for the desired habitat (i.e., riparian, wetland, and upland) with minimal

maintenance required after project implementation. Road-crossing culverts and bridges would cross various drainages, but only where necessary to accommodate the approved Specific Plan circulation system. Modified drainage/jurisdiction includes existing stabilized and engineered tributary drainages that are enhanced, and areas where new drainage/jurisdiction are being created.

Restoration strategies for temporary and permanent impacts to tributary drainages will be designed to reintroduce and establish self-sustaining vegetation communities commensurate with the level of disturbance or loss within each canyon. The individual site designs will provide a response to post-construction hydrology, channel morphology, and other environmental factors that may be altered by development.

The drainages within these canyons are primarily intermittent and ephemeral. The vegetation communities supported by the tributaries typically include big sagebrush scrub, alluvial scrub, mulefat scrub, arrow weed scrub, and southern willow scrub. These vegetation communities tend to occur at low densities, except for arrow weed scrub, which can develop dense monotypic stands. Small isolated patches of southern cottonwood–willow riparian forest and coast live oak riparian woodland are present where the soil substrate and hydraulic support are appropriate. Occasional individual cottonwoods and oaks are also found along these drainages.

Intermittent drainages may concentrate sufficient runoff to support the presence of mesic wetland vegetation communities such as southern willow scrub and southern cottonwood–willow riparian forest. Ephemeral drainages generally lack sufficient runoff to support mesic wetland vegetation and are more likely to support vegetation communities that reflect drier conditions. Along this hydraulic gradient are found, in order of wetter to drier, mulefat scrub, arrow weed scrub, big sagebrush scrub, and alluvial scrub. River wash is present in the driest conditions, especially where soil substrates have high permeability.

Restoration Strategies

Development within each canyon would result in various degrees of impact to the canyon environment, including (1) complete fill of the stream channel, (2) stream channel stabilization, and (3) newly created stream channel. Each of these post-construction scenarios is addressed in terms of opportunities and constraints to maximize functions and services within the post-construction context. It is anticipated that the entire channel widths as designed may not result in Corps-jurisdictional area, but that the Corps-jurisdictional drainage feature would result in a braided or serpentine primary channel that can meander within the larger constructed drainage complex. Within any given rain season, the active flow channel may locate within any portion of the broader tributary floodplain. At the current design level, the channel designs do not specify

where and how wide the primary channels within the drainage feature would be. It is anticipated that this will be an aspect of the final designs for each individual, site-specific final mitigation plan.

Advance mitigation projects are planned for river and tributary locations and will be implemented prior to RMDP impacts. Advanced mitigation projects are the Potrero Canyon CAM wetland creation (Section 2.2.2), Mayo Crossing (Section 2.2.3), and Middle and Upper Salt Creek enhancement (Section 2.2.4). Other mitigation projects will be implemented concurrent with or within two years of impacts from the RMDP project with which they are associated unless precluded by ongoing project construction. These projects include restoration of temporary impacts and habitat creation, restoration and enhancement. These projects include Lower Salt Creek Riparian Mitigation (Section 2.2.5), Lion Canyon (Section 2.2.6), Santa Clara River mitigation at the Water Treatment Plant Utility Corridor (Section 2.2.7), Long Canyon (Section 2.2.8), Chiquito and San Martinez Grande Canyons (Section 2.2.9), and Potrero Canyon Riparian mitigation (Section 2.2.10). Two additional general categories of RMDP mitigation include restoration of temporary jurisdictional impacts on tributaries (Section 2.2.11) and the River (Section 2.2.12). Mitigation for temporary impacts will be implemented within two years of impacts unless precluded by ongoing project construction. A brief description of mitigation implementation components is provided in Section 2.2.13).

Channel Stabilization

The means to stabilize tributary channels present opportunities to establish a greater diversity of vegetation communities, because stabilization features often have a secondary effect of capturing and concentrating runoff at specific locations. The resident time of water behind these structures may be sufficient to support more mesic hydrophytic vegetation, such as southern willow scrub, and individual trees, such as cottonwood. The mitigation design will take full advantage of these conditions to maximize functions and values by planning for a variety of vegetation communities that reflect the hydrology that is associated with these stabilized channels.

Establishment would include selected container plantings and cuttings of wetland species. A native seed mix of appropriate species that are common to the various vegetation communities would be applied to these sites in accordance with the environmental tolerances and natural distribution of the vegetation community. Other features such as wattled live cuttings may be employed in association with channel stabilization features, such as grade control devices and basins, or as stand-alone stabilization features, depending upon anticipated flow velocities.

A temporary irrigation system would be utilized to provide early establishment of native vegetation and as a hedge against winter drought. The irrigation system may be attached to a

potable water system that is associated with new development or operated with a water truck hook-up. Maintenance and monitoring would be conducted over a 5-year period to guide the emerging vegetation toward established performance criteria.

Complete Fill of Channels and Newly Created Channels

Some tributary drainages (Long Canyon and portions of Lion and Chiquito Canyons) would be relocated horizontally and/or vertically from the existing drainage alignment in order to accommodate construction techniques that are necessary to stabilize a particular development area. In these cases, the mitigation would be designed in tandem with the recreated drainage channel. The design process would allow for the creation of a variety of channel features that can support diverse wetland vegetation communities that replace impacted functions and values. Channel design can recreate a variety of flow gradients that support various vegetation communities. Channel features such as creek terraces can isolate mitigation areas where net evaporation is needed to support hypersaline conditions. The control of soil substrate would allow for the installation of buried low permeable layers that perch groundwater to create localized wetland areas. Soil salvage may be used when on-site soils are unique and conducive to the establishment of specific vegetation types.

A variety of installation techniques may be used to establish vegetation communities, depending upon the most successful propagules of each species. These may take the form of container plants, live cuttings (individual and wattled), and seeds.

A temporary irrigation system would be utilized to provide early establishment of native vegetation and as a hedge against winter drought. The irrigation system may be attached to a potable system that is associated with new development or operated with a water truck hook-up. Maintenance and monitoring would be conducted over a 5-year period to guide the emerging vegetation toward established performance criteria. These criteria will be based on the quality of vegetation impacted.

2.2.3 Advance Mitigation at Potrero Canyon

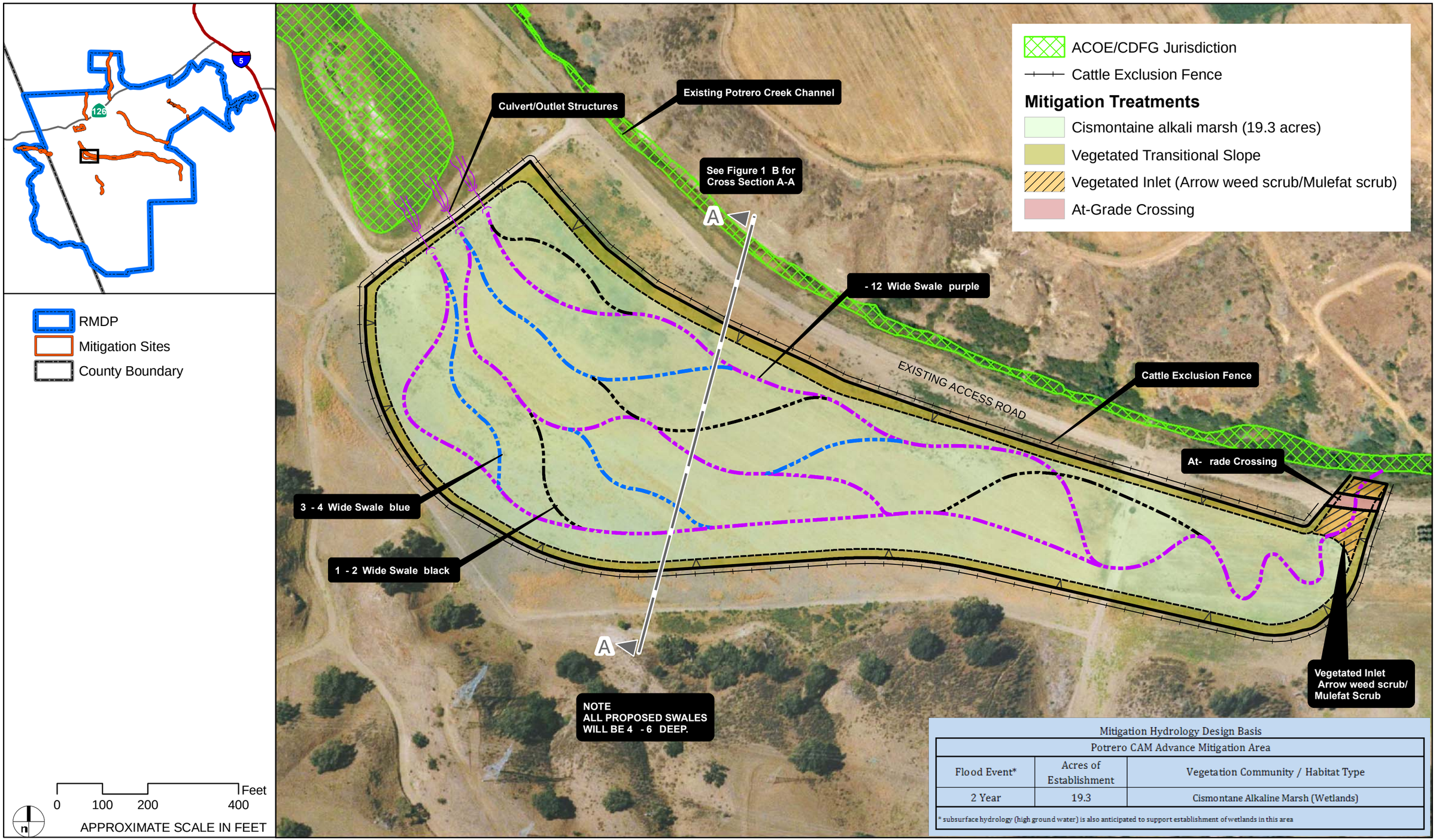
Advance mitigation will be implemented within the Potrero Canyon drainage at the cismontane alkali marsh (CAM) site. This mitigation will be implemented prior to any permanent impacts to waters of the United States (Figure 10). There are four goals for this project:

- **Goal 1:** Establish 19.3 acres of Corps-jurisdictional area to compensate for impacts to jurisdictional drainages from implementation of the RMDP (primarily small to large tributary drainages to the Santa Clara River).

- Objectives:
  1. Implement micro-topographical grading to convert an agricultural field and pastureland to Corps-jurisdictional area
  2. Establish appropriate hydrological connectivity to existing drainage channel and subsurface groundwater sources
  3. Exclude grazing activities and control exotic species.

- **Goal 2:** Establish self-sustaining cismontane alkali marsh (CAM) at site
  - Objectives:
    1. Develop hydrologic connections to upstream surface flows and subsurface groundwater through initiating grade modifications and subsurface drain corrections
    2. Design and establish site topography to distribute and retain low intensity-low volume overland surface flows that promote the establishment of CAM vegetation
    3. Install outlet drain feature that allows for surface water retention, yet allows post-construction modification to fine-tune water retention lag times
    4. Plant species appropriate for CAM establishment using native propagules
    5. Allow development of freshwater marsh and mule fat scrub vegetation as minor components of the overall habitat complex. It is anticipated that pockets of freshwater vegetation communities will develop where hydrologic conditions favor these species (e.g., areas with regular freshwater flushing and/or standing water). A diverse vegetation community mosaic is expected and preferred; however, the design of the site will be to develop primarily CAM vegetation.

- **Goal 3:** Replace wetlands functions and services of proposed impacts prior to project impacts
  - Objectives:
    1. Initiate implementation of site in advance of project impacts, including installing exclusionary fencing to protect area from grazing pressure and agricultural operations, developing hydrology that supports establishment of CAM vegetation, and promoting CAM establishment through appropriate restoration and management actions
    2. Verify establishment of target functions and services through implementation of functional assessment protocol.



Mitigation Hydrology Design Basis

Potrero CAM Advance Mitigation Area		
Flood Event*	Acres of Establishment	Vegetation Community / Habitat Type
2 Year	19.3	Cismontane Alkaline Marsh (Wetlands)

* subsurface hydrology (high ground water) is also anticipated to support establishment of wetlands in this area

FIGURE 10

Draft Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Potrero Advance Mitigation

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- **Goal 4:** Develop wetlands functions and services at a level comparable to existing functions and services of areas supporting CAM vegetation in Potrero Valley.
  - Objectives:
    1. Design the site with features that mimic existing sites supporting CAM vegetation in Potrero Valley, including sinuous swales, shallow gradients, and vegetated hummocks
    2. Measure the success of achieving comparable functions and services through conducting functional assessments of the mitigation area and a reference site.

Existing conditions at the mitigation site are shown on Figure 10A.

Existing vegetation, hydrology, topography, soil conditions, and watershed context are described below.

- **Vegetation:** The site is currently a pasture used for grazing or other agricultural uses. The vegetation is composed of predominantly non-native plant species, including milk thistle (*Silibum marianum*), wild oat (*Avena* spp.), brome grasses (*Bromus* spp.), filaree (*Erodium* spp.), and mustard (*Hirshfeldia incana*). No special-status species are known from the site. The land is disked annually to manage weeds, and provides very limited habitat value. Surrounding the site is a mosaic of valley oak/grass, California annual grassland, California sagebrush scrub and additional agricultural land.
- **Hydrology:** There are no jurisdictional areas within the proposed site. To the north of the site is Potrero Creek, which runs parallel to the dirt access road that passes through Potrero Valley. Potrero Creek is an incised channel that is not hydraulically connected to the mitigation site. To the northwest of the site there is an existing depressional area that supports CAM, but is disconnected from the site due to an elevated dirt road. This area of CAM drains toward the north and eventually develops into a channel that conveys flow into the Santa Clara River.
- **Topography:** The topography of the site is a very gently sloping concave surface in the low point of the east-west trending Potrero Valley. It slopes gently toward the northwest at a gradient of between 2–5%. There are no significant physical features on the site.
- **Soils:** The soils on site are fine-textured silty and loamy soils.
- **Watershed Context:** Currently, the site does not contain surface hydrology that is connected to existing jurisdictional resources. However, upon establishment of the site, a connection to both the upstream Potrero Creek channel, and the downstream existing

CAM area, and beyond that the Santa Clara River, would be created. At the upstream connection, the site would be designed to receive only secondary flows during high flow events. The existing low flow of the Potrero Creek channel would not be affected. At the downstream connection, the site would be designed to outlet flows underneath the existing dirt access road and into the existing lower CAM area to the northwest.

Rationale for Success

- Site soils present similar textural and chemical characteristics as found in areas currently supporting CAM vegetation in Potrero Canyon. These factors include fine-textured silty soils and hypersalinity. Hypersalinity at the CAM mitigation site is a key component of CAM ecology that excludes other freshwater and brackish marsh species from establishing within CAM-occupied sites.
- Subsurface hydrology appears to be similar to areas supporting CAM vegetation. Groundwater depth and movement is similar to CAM-occupied sites within Potrero Canyon. In existing CAM areas, groundwater depth was measured from December 2006 through December 2007. Groundwater depth ranged from 1.99 to a maximum of 7.13 feet below land surface during this period. Within the planned CAM mitigation site, groundwater was measured at a maximum depth of 7.9 feet below land surface (data on groundwater was collected by Dudek hydrologists). It is anticipated that the CAM vegetation will be primarily supported by groundwater, with occasional inputs of surface water during the rainy season from connectivity with Potrero Creek upstream of the site.
- CAM is present immediately downstream of the planned CAM mitigation site in a shallow drainage swale that is physically similar to what is anticipated for the planned CAM mitigation site. This proximity and physical similarity suggests hydrology and soils are present that would support CAM vegetation with implementation of proposed mitigation design.
- The planned CAM mitigation site will retain a significant watershed area that will provide overland flow across the site during winter rain events. The low intensity–low volume, prolonged-duration overland flow is characteristic of CAM sites throughout the valley. Overland flow is expected to provide winter soil saturation at the ground surface and slowly dry through spring months. This dry down period likely protects CAM sites from leaching salinity from the soil

Vegetation Types

- AGR = Agriculture
- AS = Alluvial scrub
- AWS = Arrow weed scrub
- BCW = Bulrush-cattail wetland
- BDDS = Brittlebush drought deciduous scrub
- BSS = Big sagebrush scrub
- BSS-CB = Big sagebrush scrub-California buckwheat
- CAM = Cismontane alkali marsh
- CC = Chamise chaparral
- CC-HCC = Chamise-hoaryleaf ceanothus chaparral
- CFWM = Coastal and valley freshwater marsh
- CGL = California annual grassland
- CHP = Undifferentiated chaparral
- CHP-HCC = Undifferentiated chaparral-hoaryleaf ceanothus chapparal
- CLOW = Coast live oak woodland
- CSB = California sagebrush scrub
- CSB-A = California sagebrush scrub-Artemisia
- CSB-BS = California sagebrush scrub-black sage
- CSB-CB = California sagebrush scrub-California buckwheat
- CSB-CHP = California sagebrush scrub-undifferentiated chapparal
- CSB-DW = California sagebrush scrub-deerweed
- CSB-PS = California sagebrush scrub-purple sage
- CWW = California walnut woodland
- CYS = Coyote brush scrub
- DEV = Developed
- DL = Disturbed land
- EDS = Eriodictyon scrub
- EUC = Eucalyptus
- GRG = Giant reed grassland
- HCC = Hoaryleaf ceanothus chaparral
- HW = Herbaceous wetlands
- MES = Mexican elderberry scrub
- MEW = Mexican elderberry woodland
- MFS = Mulefat scrub
- MOW = Mixed oak woodland
- NAP = Not a part
- OC (DEV) = Open channel (developed)
- OC = Open channel
- ORN = Ornamental
- OW = Open water
- PNGL = Purple needlegrass
- RW = River wash
- SCLORF = Southern coast live oak riparian forest
- SCWRF = Southern cottonwood-willow riparian forest
- SOC = Scrub oak chaparral
- SWS = Southern willow scrub
- TAM = Shrub tamarisk
- VOG = Valley oak/grass
- VOW = Valley oak woodland
- bCC = Burned chamise chaparral
- bCHP = Burned undifferentiated chaparral
- bCSB = Burned California sagebrush scrub
- bCSB-CHP = Burned California sagebrush scrub-undifferentiated chaparral
- dCSB = Disturbed California sagebrush scrub
- dCSB-PS = Disturbed California sagebrush scrub-purple sage
- dMES = Disturbed Mexican elderberry scrub
- dMFS = Disturbed Mulefat
- dRS = Disturbed riparian scrub
- dSCWRF = Disturbed southern cottonwood-willow riparian forest
- dSWS = Disturbed southern willow scrub

FIGURE 10A

Draft Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Potrero Advance Mitigation Existing Conditions

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- The combination of surface water and groundwater will benefit the mitigation site and help to even out potentially inconsistent (shallow) groundwater resources. Surface water can replenish local and "perched" groundwater in soil lenses. This water will evaporate through capillary action in dry summer months raising soil salinity at the surface through capillary action, depositing salts at the soil surface and thereby mimicking the existing hydraulic condition that allows CAM to persist in the absence of more freshwater loving vegetation.
- The existing unpaved road and culvert drainage structure that is present at the downstream edge of the mitigation site will be modified to allow for minor impounding of surface flows and regulation of flow to the existing lower CAM. The drainage control will enable the site to retain hydrologic inputs within the site to a specified level and release water above a designed elevation. The hydraulic system will promote the desired annual soil wetting/dry-down cycle that sustains hypersaline soils that support CAM vegetation in Potrero Canyon.

The mitigation approach is designed to support successful establishment of self-sustaining CAM vegetation and ecological functions and services. The following features of the mitigation approach are designed to support mitigation success:

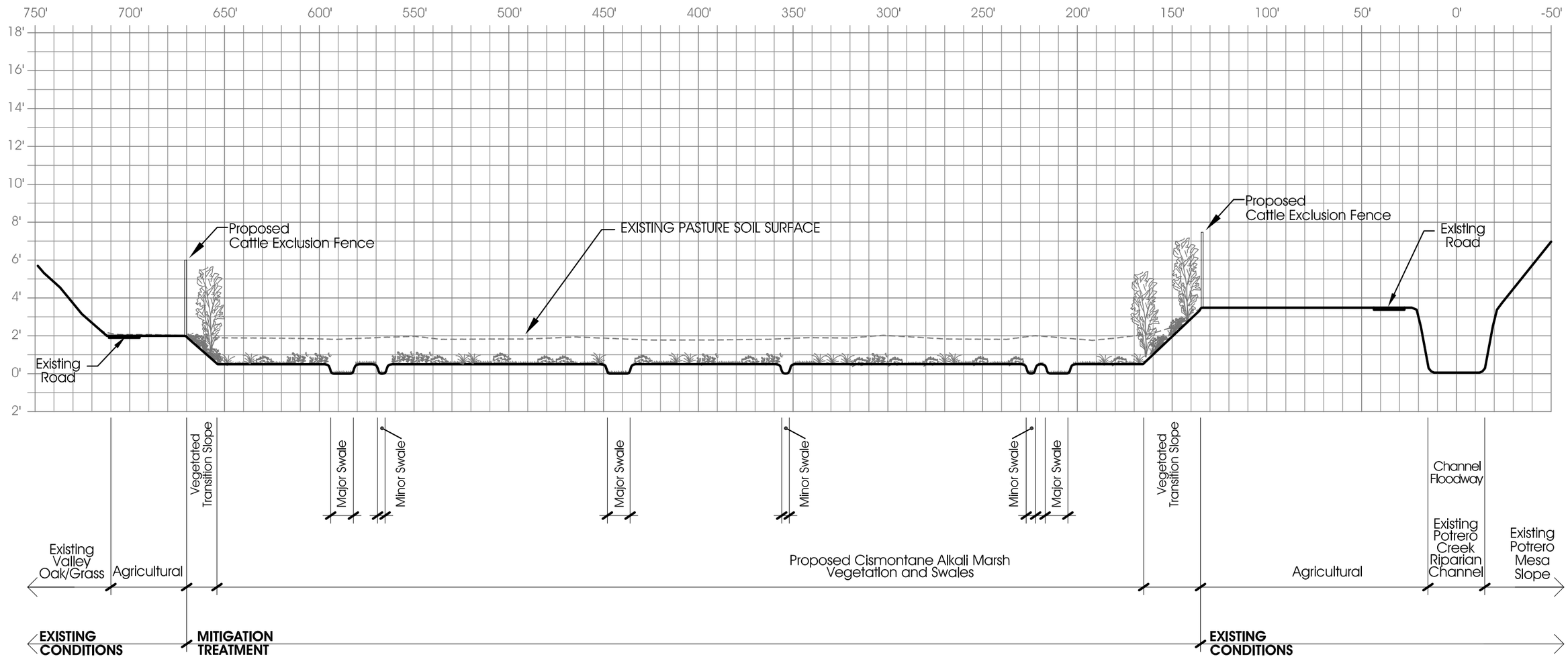
- The existing unpaved road and culvert drainage structure that is present at the downstream edge of the mitigation site will be modified to augment down-canyon flow from the mitigation site to the existing CAM vegetation. Similarly, the unpaved road south of the planned mitigation site will be modified to augment surface hydrology connects to the upland watershed south of the mitigation area. These land alterations are intended to create appropriate sheet flow, soil saturation, and local groundwater replenishment during winter months. The restored hydraulic system will promote the desired annual soil wetting/dry-down cycle that sustains hypersaline soils that support CAM vegetation in Potrero Canyon.
- Seed collection from CAM species throughout Potrero Canyon will be conducted prior to CAM impacts to build a substantial supply of local genetic native seed that will be used to establish CAM vegetation at the planned mitigation site. Seed supplies will be held in storage to provide a ready supply of seed should remedial actions be required to supplement underperforming areas of the mitigation site during the CAM vegetation establishment period.
- Appropriate vegetation performance criteria will be established through measurement of CAM reference sites prior to project impacts. These criteria will be used to inform mitigation site evaluations during the CAM establishment period and will drive adaptive

management and remedial actions to maintain the vegetation establishment trajectory toward achievement of ultimate performance criteria.

The following implementation components are anticipated to establish CAM on the agricultural fields.

- **Site Grading**. Grading and contouring will be implemented to create appropriate hydraulic relationships to the subsurface groundwater and adjacent drainage channel. Site grading is anticipated to have approximately 0.5–4.0-foot cut depths (appropriate hydraulic relationship will be validated through detailed topographic survey and hydrology studies; see attached Figure 12). The grading depth is anticipated to be relatively shallow (0.5–1.0 foot) through much of the site, and then increase to a maximum of approximately 3–4 feet towards the outer edges where the existing elevation rises in order to create a relatively level CAM area in cross section (Figure 10B). Surface flow will be directed through shallow (4–6 feet deep) braided swales designed to widely distribute seasonal surface water across the site to maximize percolation and replicate surface soil salinity cycles that are assumed present in existing CAM.
- **Surface Water Inlet**. A graded soft-bottom inlet will allow overbank flow from Potrero Creek into the mitigation site. The inlet will be graded to an elevation that allows flow from a 2-year or greater flood event to enter the site at low velocity. Velocity will be controlled by vegetation established in the inlet. A stabilized at-grade access road crossing will be constructed across the inlet.
- **Surface Water Outlet**. Culvert pipes will be installed at the downstream end of the site to convey surface water to the lower CAM area. Pipes will be sized to drain the site over a short time to minimize long term ponding.

Initial seed and plant installation using appropriate species. Target vegetation communities will be established using appropriate species plant palettes (Section 4.6). Plant materials used to implement the planting plan will include seed, stolons and container plants. Container plants will generally include liners and 1-gallon container stock propagated from on-site seed collections. Specific locations for installation will be designated on planting plans or marked on site temporarily with pin flags by the project biologist. Seed and stolons (for salt grass) will be collected from the vicinity of the site.



VERTICAL SCALE 10x HORIZONTAL SCALE
SCALE IS ESTIMATED AND WILL BE
VERIFIED UPON RECEIVING FINAL TOPO

NOTE:
This cross section is for illustrative purposes only, and not for construction.

FIGURE 10B

Draft Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Potrero Advance Mitigation Crossing Section A-A

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2.2.4 Advance Mitigation at Mayo Crossing

Mitigation will be implemented within an area adjacent to the Santa Clara River at Mayo Crossing in advance of development impacts (Figure 11). The planned mitigation site at Mayo Crossing includes an area along the northern margin of the Santa Clara River that is in agricultural use. The site is surrounded by wetland and riparian habitat associated with the Santa Clara River, with the main river channel to the south and a secondary river channel to the north. Due to its location within the floodplain of the Santa Clara River, the site is an ideal location to establish Corps-jurisdictional area. The entire area is planned as Corps-jurisdiction. Goals and objectives of this tributary mitigation site are summarized below.

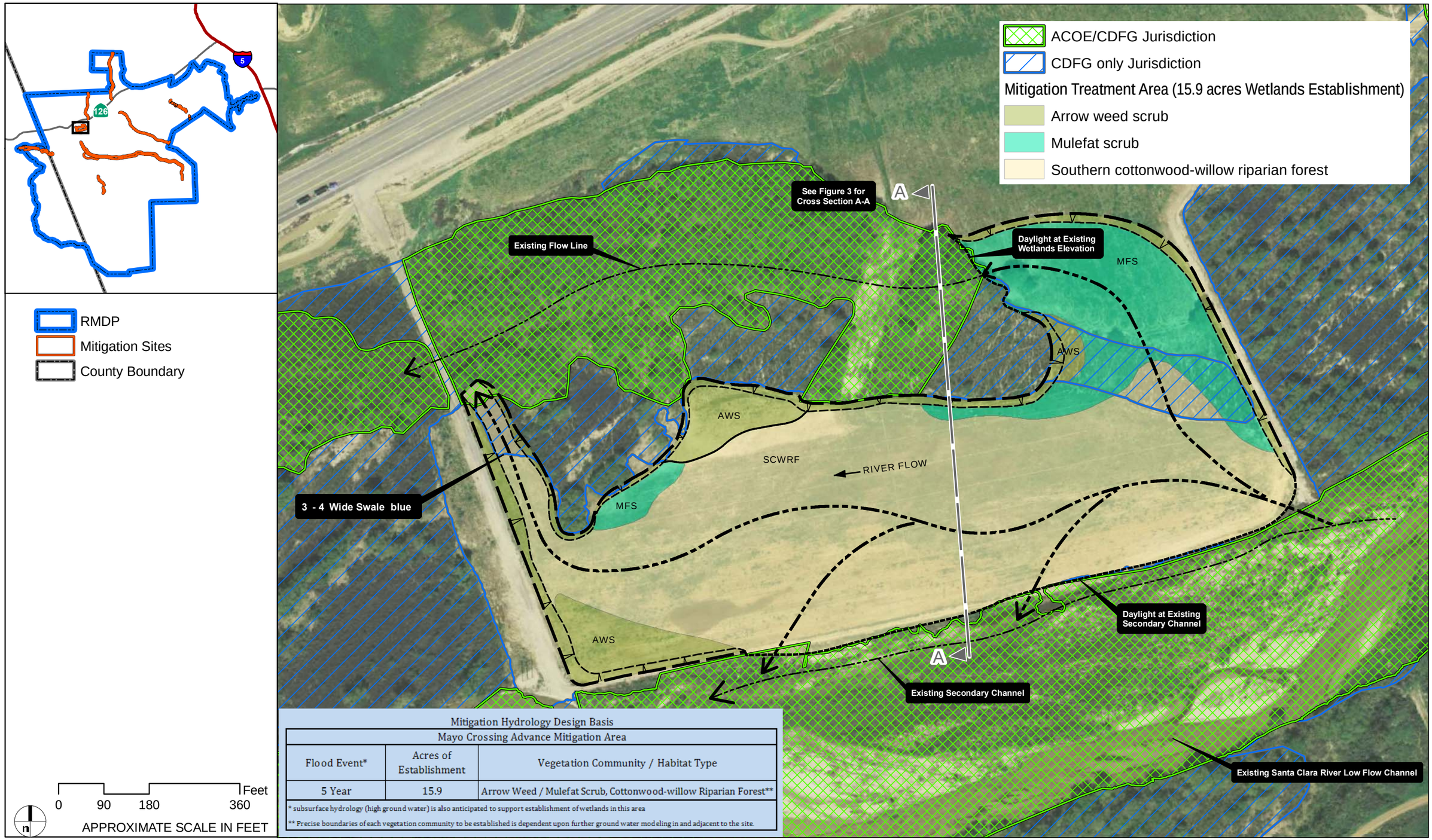
- **Goal 1:** Create approximately 15.9-acre of Corps-jurisdictional area to compensate for impacts to jurisdictional drainages from implementation of the RMDP (Santa Clara River and small to large tributary drainages to the Santa Clara River).
  - Objectives:
    1. Establishment of appropriate hydrology and floodplain functions that benefit the RMDP area.
    2. Establishment of riparian vegetation that is consistent with the Santa Clara River floodplain that will remain in dynamic equilibrium.
    3. Design mitigation site to blend naturally with surrounding topography and vegetation communities.
    4. Maximize site context to develop contiguity to adjacent habitat.
- **Goal 2:** Establish self-sustaining southern cottonwood-willow riparian forest (SCWRF), herbaceous wetlands (HW), mule fat scrub (MFS), arrowweed scrub (AWS), and Riverwash.
  - Objectives:
    1. Develop hydrologic connections to upstream surface flows and subsurface groundwater through grade modifications that allow 5-year storm events to enter the mitigation site.
    2. Design and establish site topography to distribute and retain low intensity-low volume overland surface flows that maximize local groundwater replenishment.
    3. Create connections to existing floodplain features that creates flow-through design and drainage.

4. Plant species appropriate for target riparian vegetation community establishment using native seed, cuttings, and container plants.
5. Control exotic species.
6. Provide long term management through monitoring and adaptive management actions

- **Goal 3:** Replace wetlands functions and services of proposed impacts prior to project impacts.
  - Objectives:
    1. Initiate implementation of site in advance of project impacts, including grading to establish hydrology that supports establishment of target riparian vegetation communities.
    2. Verify establishment of target functions and services through implementation of functional assessment protocol.
    3. Leverage natural recruitment through appropriate restoration and management actions.
    4. Perform long term management that promotes ongoing native recruitment and establishment.

The site is currently active agricultural land use that involves frequent and routine plowing, planting and crop harvesting; therefore, there is no natural vegetation within the proposed mitigation area (Figure 11A). Unpaved access roads are present on three sides of the proposed mitigation area. Site topography is very flat due to agricultural activities. There are no significant physical features on the site. Existing utility poles are present along the western edge of the site.

The proposed site is not hydraulically connected to any of the adjacent drainages. A shallow drainage is present north of the mitigation site. The active channel of the Santa Clara River is present along the southern side of the mitigation site. The active low flow channel of the Santa Clara River is located 100-200 feet to the south of the mitigation site. A secondary flow channel is present within natural vegetation communities along the southern edge of the agricultural field.



Mitigation Hydrology Design Basis

Mayo Crossing Advance Mitigation Area

Flood Event*	Acres of Establishment	Vegetation Community / Habitat Type
5 Year	15.9	Arrow Weed / Mulefat Scrub, Cottonwood-willow Riparian Forest**

* subsurface hydrology (high ground water) is also anticipated to support establishment of wetlands in this area

** Precise boundaries of each vegetation community to be established is dependent upon further ground water modeling in and adjacent to the site.

FIGURE 11

Draft Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Mayo Crossing Advance Mitigation

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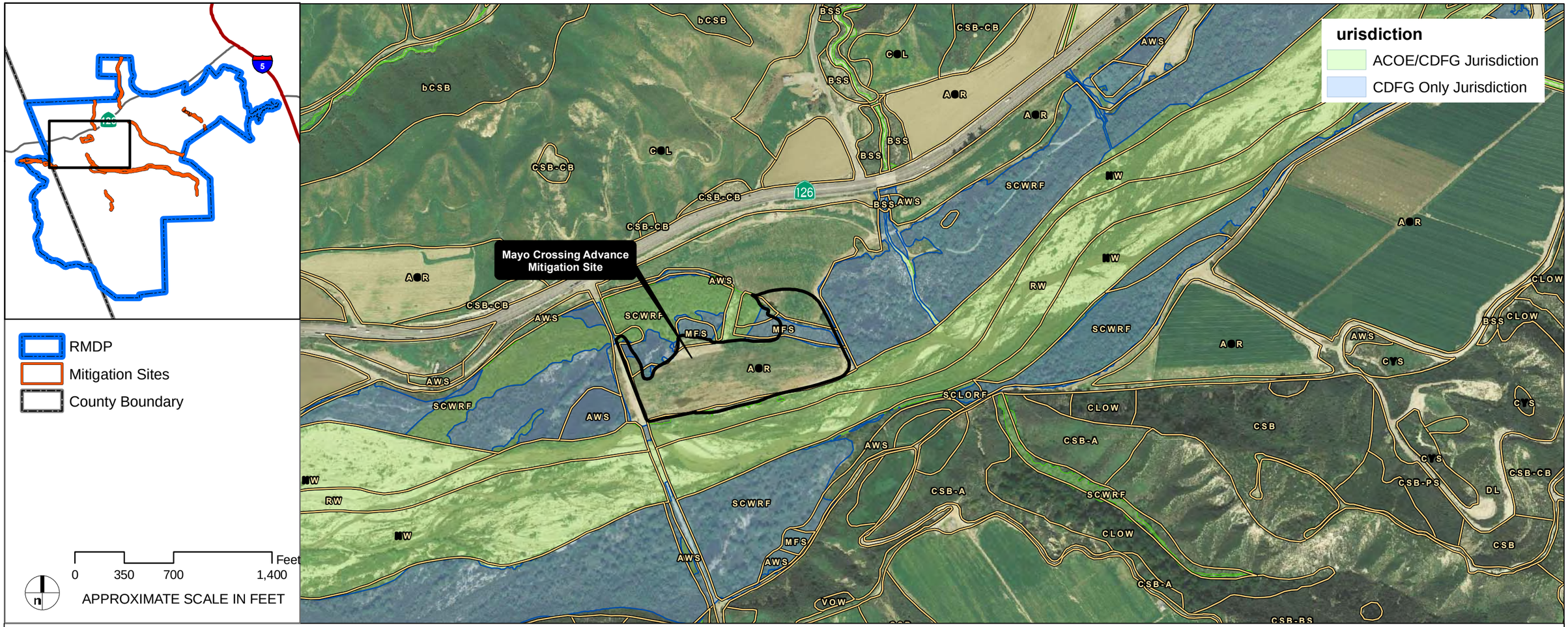

Vegetation Types

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- BDDS = Brittlebush drought deciduous scrub
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- dMES = Disturbed Mexican elderberry scrub
- dMFS = Disturbed Mulefat
- dRS = Disturbed riparian scrub
- dSCWRF = Disturbed southern cottonwood-willow riparian forest
- dSWS = Disturbed southern willow scrub

FIGURE 11A

Draft Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Mayo Crossing Advance Mitigation Existing Conditions

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There are state-only jurisdictional areas within the proposed site with no federal jurisdiction. The site is surrounded on four sides by adjacent, off-site riparian vegetation under the jurisdiction of either the Corps and/or California Department of Fish & Game (CDFG). The river active floodway supports riverwash, early stage SCWRF, and MFS. North, west and east of the mitigation site is existing SCWRF, MFS, and AWS located on upper river terraces. MFS north of the site contains non-native grass understory.

Success of this river mitigation project is supported by the following factors.

- The mitigation site is located in the lower portion of the Santa Clara River watershed that drains approximately 1,620 square miles in Los Angeles County. Based on the location within the overall watershed, there is sufficient hydraulic flow to support the additional jurisdictional area.
- Site soils appear to be highly productive and fertile, and are similar in type to those observed in adjacent riparian areas (sandy loams).
- Subsurface hydrology is tied to the Santa Clara River. However, SCWRF located north of the mitigation site persists without apparent flow from the Santa Clara River. There is potential for floodwater to back up into the riparian areas, but more likely the area subsists on groundwater resources.
- Adjacent fluvial features of the Santa Clara River such as secondary channel flow provides an optimum condition to make a substantial hydraulic connect to the active river floodplain. This opportunity to create on-site surface hydrology will support the intended target vegetation communities. In addition, a flow-through design can be accomplished by returning water into the active secondary channel, and through surface sheet flow connection to the wetland areas north of the mitigation site.
- The planned mitigation site will be subject to flows generated from a significant watershed area that will provide overland sheet flow across the site during winter rain events.
- The presence of extensive existing riparian vegetation immediately adjacent to the mitigation site will provide a ready source of local seed and propagules.

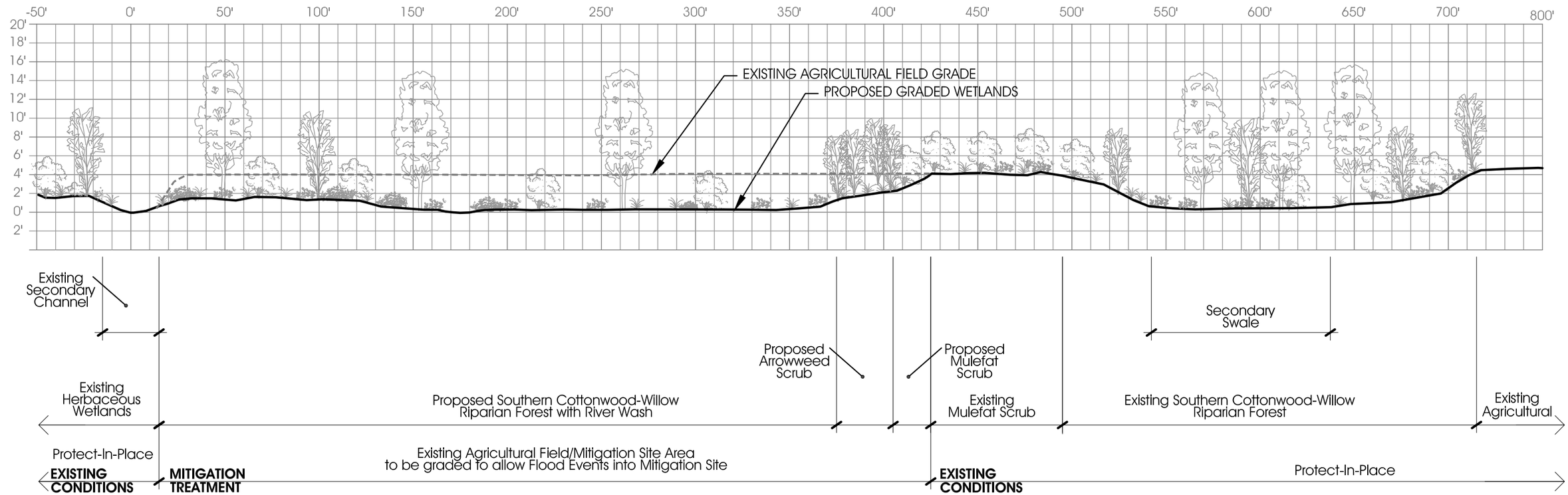
The design approach includes grade modification through soil excavation to establish elevations and contours appropriate for hydrologic influence from the Santa Clara River (Figure 11B). With the establishment of target elevations comparable to the existing elevations within the associated braided channels of the Santa Clara River, it is anticipated that hydrophytic vegetation would develop with only limited intervention. A combination of passive and active restoration with 5 years of maintenance and monitoring is planned. Vegetative communities likely to establish

include those that surround the site, such as southern cottonwood-willow riparian forest, arrow weed scrub, mulefat scrub, river wash, and/or herbaceous wetlands. The following implementation components are anticipated to establish the target vegetation communities on the agricultural fields.

- **Site Grading:** Grading and contouring will be implemented to create appropriate hydraulic relationships to the subsurface groundwater and adjacent secondary drainage channels. Site grading is anticipated to have approximately 3–5-foot cut depths to provide overbank flow onto the mitigation site (appropriate hydraulic relationship will be validated through detailed topographic survey and appropriate hydrology studies)
- **Site Preparation:** No site preparation other than grading is anticipated because the depth of cut will remove any weed seed bank that is present within the agricultural field.
- **Initial seed and plant installation using appropriate species: Target vegetation communities will be established using appropriate species plant palettes (Section 4.6).** Plant Palette tables are generalized for the vegetation community and not all species may be incorporated into the final project design. Plant materials used to implement the planting plan will include seed, cuttings, wattles, and container plants. Container plants will generally include liners and 1-gallon container stock propagated from seed and propagules collected within the RMDP area. Specific locations for installation will be designated on planting plans or marked on site temporarily with pin flags by the project biologist.

2.2.5 Advance Mitigation in Upper and Middle Salt Canyon

Mitigation opportunities within the Salt Creek drainage and High Country SMA/SEA 20 were described in the Revised Draft Newhall Mitigation Feasibility Study (Dudek 2007). Advance mitigation in the upper and middle reaches of Salt Canyon involves the installation and maintenance of cattle exclusion fence to protect and enhance existing riparian jurisdictional areas from degradation by cattle (Figure 12). The fence design will not present a barrier to wildlife movement within Salt Canyon. The fence will exclude cattle from 19.7 acres of existing jurisdictional area. The mitigation approach incorporates passive revegetation through natural recruitment combined with weed management actions. A functions and services lift is anticipated through native recruitment that is anticipated in the absence of the cattle grazing disturbance regime. A weed management component will support native recruitment by suppressing non-native vegetation establishment over time.



VERTICAL SCALE 5x HORIZONTAL SCALE
SCALE IS ESTIMATED AND WILL BE
VERIFIED UPON RECEIVING FINAL TOPO

NOTE:
This cross section is for illustrative purposes only, and not for construction.

FIGURE 11B

Draft Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch Resource Management and Development Plan

Mayo Crossing Advance Mitigation Crossing Section A-A

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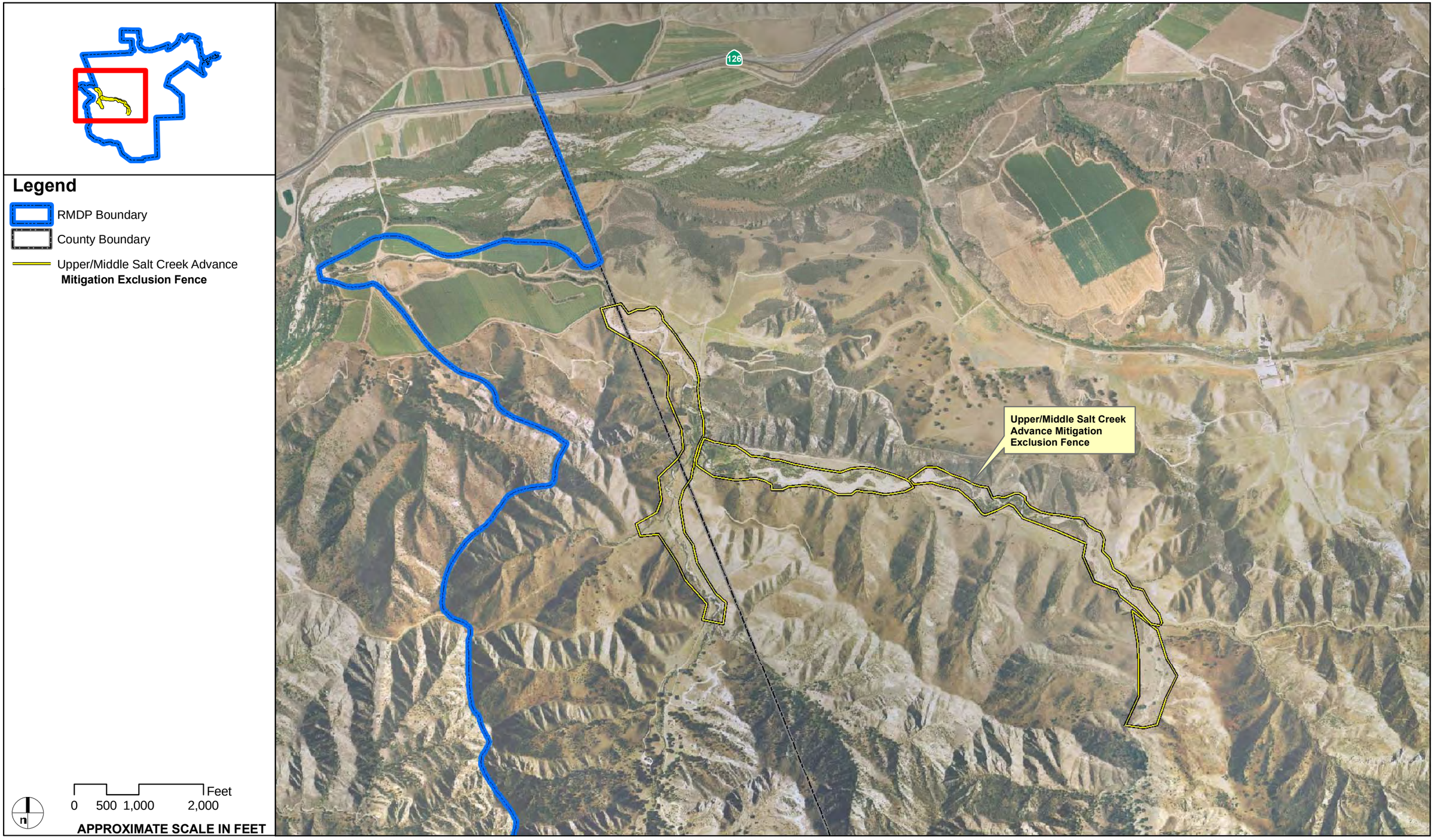

FIGURE 12

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Upper/Middle Salt Creek Advance Mitigation Exclusion Fence

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2.2.6 Salt Creek Riparian Mitigation

Design of the Lower Salt Creek riparian mitigation involved a review of previous work completed within the Resource Management and Development Plan (RMDP) area. Documents included the Newhall Ranch Feasibility Study (Dudek 2007), RMDP Draft Conceptual Mitigation Plan, and the Salt Creek hydrogeomorphic channel analysis (PWA 2006). Field reconnaissance identified six individual mitigation sites where federal and state jurisdiction can be established. One enhancement opportunity also was identified. The goals of these mitigation projects are defined below.

- **Goal 1:** Establish approximately 18.5 acres of U.S. Army Corps of Engineers (Corps)–jurisdictional area (Figure 13) to compensate for impacts to jurisdictional tributary drainages from implementation of the RMDP (primarily small to large tributary drainages to the Santa Clara River).
  - Objectives:
    1. Select only mitigation sites where creek bed is stable and establishment area can be fully connected hydraulically to Salt Creek.
    2. Avoid reaches with low creek bed stability and where existing jurisdictional and uplands vegetation communities are present.
    3. Avoid existing underground utilities (natural gas pipeline).
    4. Exclude grazing activities and control exotic species.
- **Goal 2:** Establish appropriate self-sustaining native riparian vegetation communities and/or Riverwash (RW) at each tributary mitigation site.
  - **Objectives:**
    1. Grade adjacent upland fields (agricultural and California grasslands) to create a hydraulic connection to Salt Creek that will result in braided channel flow across the mitigation sites.
    2. Enhance/modify existing ranch road culverted crossings to function as grade control to enhance upstream mitigation site hydrology and to stabilize creek bed gradient. In two locations, modified road crossings will act to redistribute downstream flows to maximize floodplain, biological, and geomorphic functions and services to the downstream mitigation site.

3. At one location, construct downstream grade structure within the existing channel utilizing bioengineering principles (e.g., no concrete structures) to enhance mitigation site (Site C) hydrology and stabilize creek bed gradient.
4. Utilize grade control structures at key locations to improve upstream hydraulic function in support of jurisdictional establishment and sustainability, and maintain sediment transport system.
5. Plant species appropriate for Southern Willow Scrub (SWS) and/or Mulefat Scrub (MFS) establishment using native propagules.

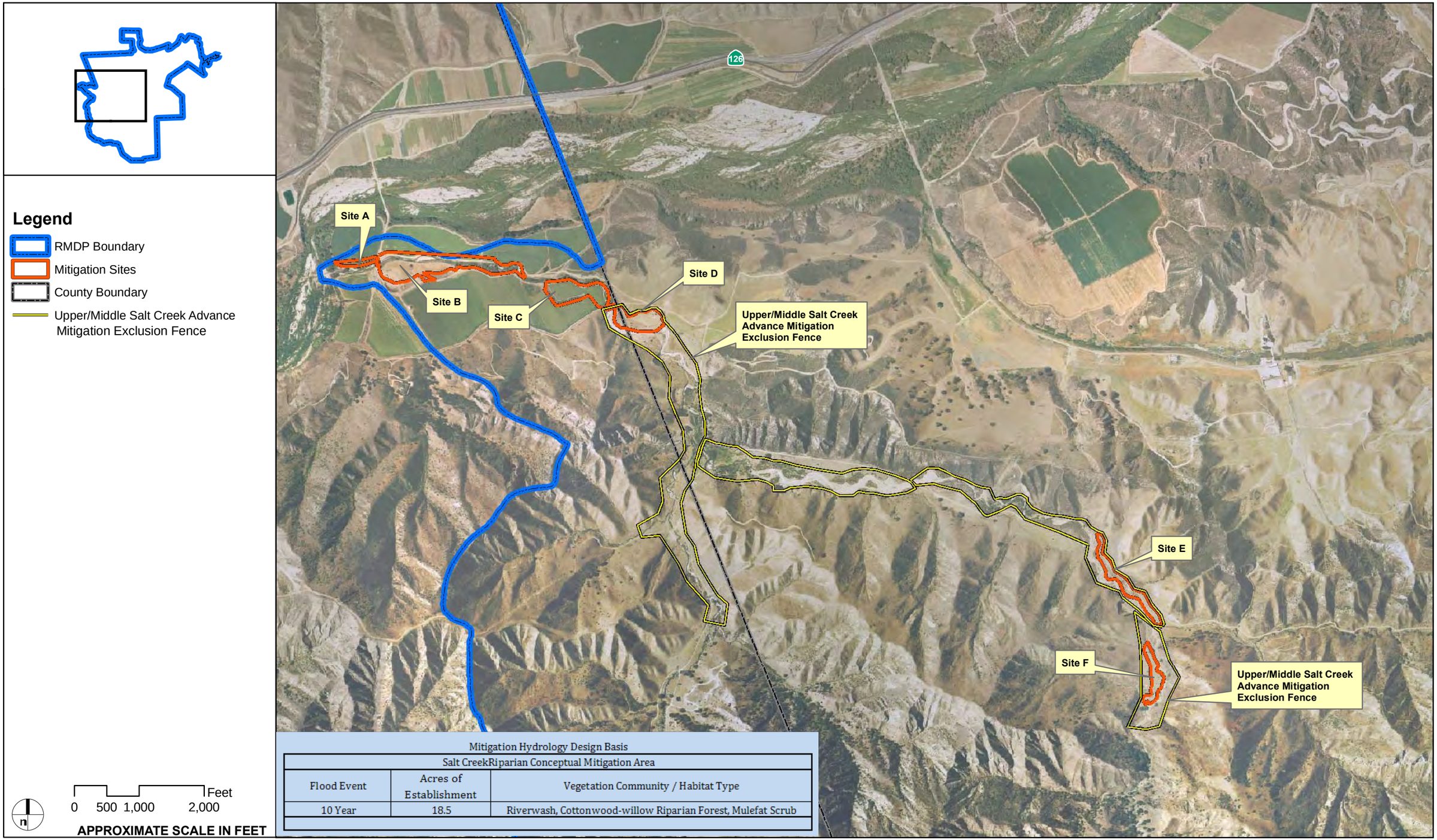
- **Goal 3:** Replace riparian vegetation community functions and services of proposed tributary impacts concurrent with project impacts resulting from implementation of the RMDP project phases.
  - **Objectives:**
    1. Initiate implementation of each site to be timed with each RMDP project phase that requires offsite mitigation for tributary impacts.
    2. Verify establishment of target functions and services through implementation of functional assessment protocol of the mitigation site(s) and a reference reach.

Mitigation Sites

The mitigation sites are variously located within the Salt Creek watershed (Figure 13). Four of the sites are located near the bottom of the watershed. All runoff developed in the watershed during rain events will pass through these sites. Two of the sites are located in the middle of the watershed, but still have a substantial watershed areas within the High Country SEA that will develop sufficient hydrology to support the intended jurisdictional resources, functions, and values.

Existing conditions at the mitigation sites are shown on Figure 4C:

- **Vegetation:** Mitigation sites in the lower watershed support agricultural crops and non-native species. In the middle watershed, the sites are open space pasturelands that are dominated by California (non-native) grasslands.
- **Land use:** The four mitigation sites in the lower watershed (Sites A–D) are currently active agricultural land or abandoned agricultural land. The active agricultural land is disked annually to manage weeds, and provides very limited habitat value. Surrounding these sites is additional agricultural land. The two mitigation sites in the middle watershed (Sites E–F) are open space pasturelands that are surrounded by similar California grasslands.



Mitigation Hydrology Design Basis

Salt CreekRiparian Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
10 Year	18.5	Riverwash, Cottonwood-willow Riparian Forest, Mulefat Scrub

FIGURE 13

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Salt Creek Riparian Mitigation Sites

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- **Hydrology:** There are no jurisdictional areas within the proposed sites. All of the sites are immediately adjacent to the existing Salt Creek channel.
- **Topography:** The topography of the sites is generally flat and gently sloping toward the creek channel. The topographic difference in elevation between existing site elevations and the creek thalweg (low point in active creek channel) is approximately 4–10 feet.
- **Soils:** The soils throughout the Salt Creek canyons are fine-textured silty and loamy soils.

Mitigation Concept

- Establish approximately 18.5 acres of federal and state jurisdictional area on six mitigation sites through site grading to match adjacent creek thalweg elevations. Where needed as indicated by hydrogeomorphic analysis, install bioengineered grade structures to distribute floodwater across the mitigation site, enhance upstream hydrology, and stabilize creek bed gradients. All structures will be located at existing farm road crossings, when feasible.
- Establish a mixture of SWS, MFS and RW vegetation communities with appropriate plantings (Section 4.6) in the lower three mitigation sites (Sites A–C). Establish riverwash in the remaining three mitigation sites (Sites D–F). Within established riverwash areas, promote passive recruitment of riverwash vegetation such as Mexican elderberry scrub, alluvial scrub, and mule fat scrub, where appropriate.
- Provide temporary irrigation, as needed, at mitigation sites A–D only.

Rationale for Success

- Site soils present similar textural and chemical characteristics as found in adjacent jurisdictional areas.
- A surface connection with the existing Salt Creek channel will be made the entire length of the mitigation sites to provide appropriate hydrology within the mitigation sites.
- Natural creek sinuosity favors the migration of braided channels into the mitigation sites.
- Bioengineered grade structures can be used to distribute creek flow across the existing channel and proposed jurisdictional establishment area site during flood events. The structures will stabilize the creek bed gradient and enhance upstream hydrology by reducing flow velocity, increasing flood water residence time, and increasing infiltration into groundwater.

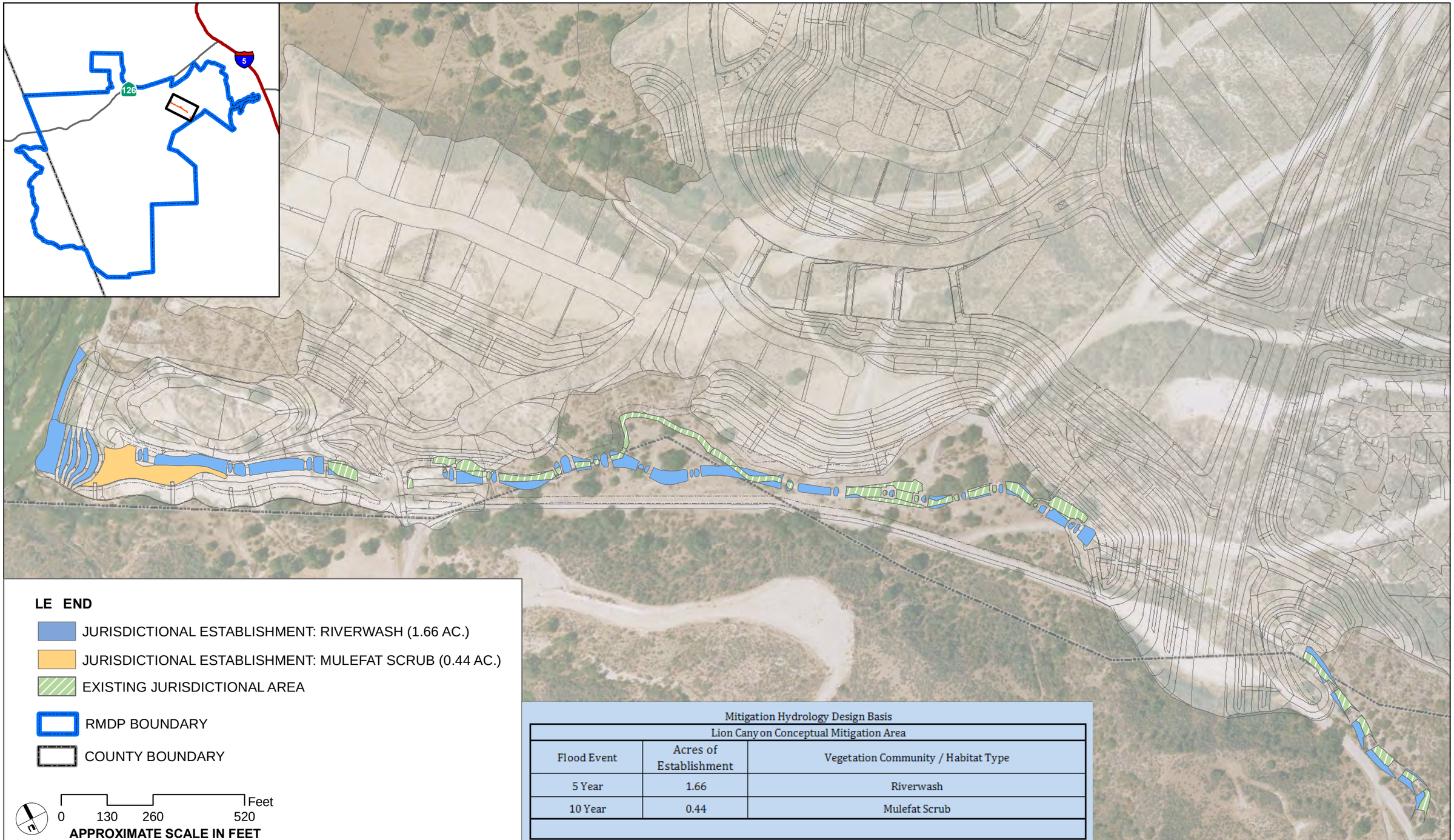
- Existing riparian habitat adjacent to the mitigation sites will increase native recruitment to establish the target vegetation communities.

2.2.7 Lion Canyon

Mitigation in Lion Canyon will include establishment, restoration and enhancement associated with the drainage channel reconfiguration. The general design concepts for the mitigation features are discussed briefly below and depicted in Figure 14. The Lion Canyon drainage would be designed to be in geomorphic equilibrium in terms of stability and delivery of sediment and water under future conditions. The channel floodplain would be designed to maximize geomorphic stability and ecological function, provide adequate flood conveyance, and avoid hydromodification to the extent possible. In addition, the design would minimize the need for maintenance activities. Overall, mitigation in Lion Canyon is expected to create approximately 2.1 acres of jurisdictional area.

Current conditions in Lion Canyon are dictated by agriculture, livestock grazing, and oil and gas operations that have heavily impacted the canyon (Figure 4B). The channels and drainages in Lion Canyon are generally deeply incised and show some headcutting associated with areas of bare ground. Past practices have heavily impacted this area, stripping much of the vegetation in the canyon. The soil in Lion Canyon varies between alluvial sand within and along the periphery of the channel; silty/sandy loam in areas dominated by big sagebrush; and organic silt/clay loam in the woodland vegetation communities. An access road adjacent to the channel compounds the erosional habit of the canyon due to the sandy soil and general lack of vegetation. Lion Canyon contains several vegetation communities including coast live oak woodland, big sagebrush scrub, southern willow scrub, and riverwash.

In accordance with mitigation measure SP-4.2-3, hydraulic modeling will be performed for the final design to assess the effects within Lion Canyon, and the design will be modified as necessary to reduce any erosion or deposition impacts. The Lion Canyon channel design incorporates the calculated post-development equilibrium slope to ensure a dynamically stable creek bed condition allowing for more or less equal amounts of erosion and deposition. The design will utilize boulder step-pool structures, biotechnical stabilization, soil cement, and turf reinforcement mat to enhance and restore the drainage. The land surrounding the channel would be revegetated with associated riparian plant communities, as well as upland plant communities, to increase the habitat-related functions and values of the drainage channel.



Mitigation Hydrology Design Basis

Lion Canyon Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
5 Year	1.66	Riverwash
10 Year	0.44	Mulefat Scrub

FIGURE 14

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

On-Site Tributary Mitigation at Lion Canyon

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Existing creek bed material found in riverwash areas, consisting of sand, gravel and cobbles, will be salvaged prior to grading impacts. Creek bed material will be placed into creek establishment areas to provide the same bed grain size within the new channel that is at equilibrium with current and future flood regime (flow velocity). Grading in Lion Canyon will establish new areas channel bottom while enhancing preserved sections of channel. Grading of the drainage will allow for the addition of the proposed boulder step-pools, turf reinforcement mats, and soil cement that will assist in the stabilization of the restored drainage. Grading areas in the channel will also allow plantings to be placed on areas that are currently deeply incised and devoid of vegetation.

In addition, native vegetation within temporary and permanent impact areas will be mulched and stockpiled for replacement within establishment and enhancement areas. A clay liner or other impervious layer (geotechnical material) will be buried upstream of selected boulder step-pool structures to perch local groundwater within the root zone of riparian species such as mule fat and willows. The perched groundwater will help to sustain riparian vegetation and will provide vegetation community diversity along the reconstructed channel.

A temporary above ground irrigation system will be installed to promote plant survival and vegetation establishment. Plant palettes for mule fat scrub, big sagebrush scrub, and southern willow scrub will conform to Section 4.6.

2.2.8 River Mitigation at Long Canyon Bridge

The planned mitigation located at the proposed Long Canyon Bridge would include restoration of temporary impacts in the Agriculture Ditch and the Santa Clara River and establishment along the edge of the river (Figure 15). Mitigation would include establishment of 2.7 acres of Corps jurisdictional area adjacent to the proposed Landmark Village project area.

Jurisdictional establishment will be achieved through grading existing agricultural field down to elevations that are consistent with the Santa Clara River floodplain. Successful grading would reestablish the hydrologic connections and/or groundwater relationship that existed prior to construction.

A detailed, site-specific mitigation design will be developed during the design phase, allowing for the creation of a variety of channel features to support diverse vegetation communities to replace impacted functions and values. The establishment approach may rely on the use of a temporary irrigation system and plant materials (seed and container plants) to establish vegetation.

The mitigation design would incorporate enhancement of existing wetland vegetation communities to improve functions and values of the mitigation site. Enhancement would include

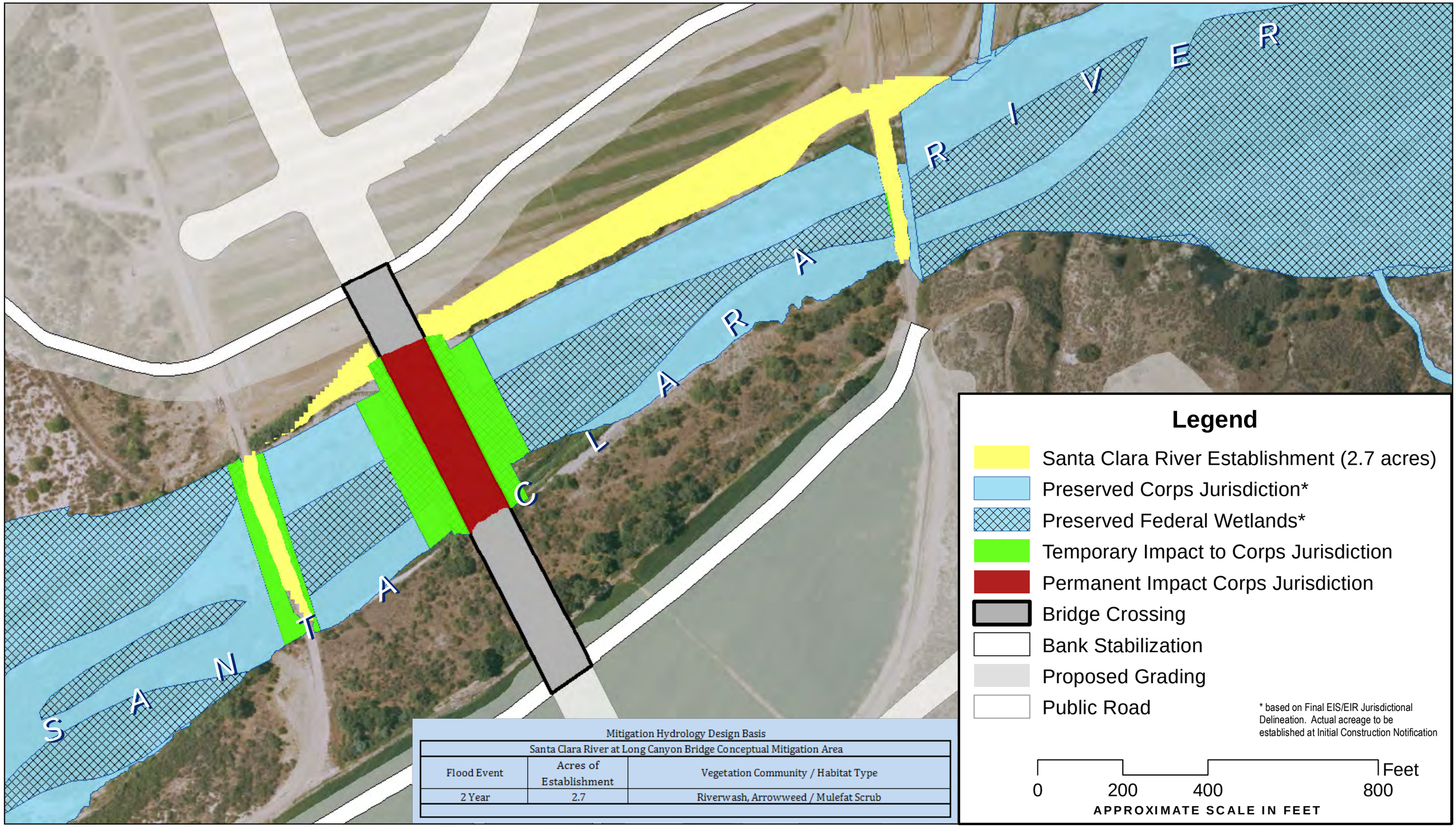
control of non-native invasive species and establishment of native species. Non-native invasive species that are prevalent within portions of the Landmark Village site include giant reed (*Arundo donax*), salt cedar, and tree tobacco. Appropriate control methods for the targeted invasive species would be implemented and then, once controlled, followed up with a combination of passive and active restoration techniques (seeding/planting). Grading and the installation of temporary irrigation systems are not anticipated for wetland enhancement areas. No specific enhancement areas have been identified for use as mitigation at this time.

2.2.9 Long Canyon

The design approach for Long Canyon is a general treatment of impacts to the Long Canyon tributary drainage. (Figure 16). The restoration strategies for the Long Canyon drainage channel include (1) complete fill of the stream channel, (2) reconstruction of the stream channel on compacted soil fill, (3) incorporation of stream channel stabilization, and 4) newly created stream channel. Overall, mitigation area is expected to create approximately 23.4 acres of jurisdictional area in upper Long Canyon and restore 1.0 acre of jurisdictional area as mitigation for temporary impacts to tributary drainages.

The proposed project design for Long Canyon would combine soil cement bank stabilization along with a soft-bottom channel. The bank stabilization, consisting of soil cement, would be emplaced according to the requirements established by the County Department of Public Works and Regional Planning (DPW). The basis of design for Long Canyon is such that any increase in flow velocities and shear stress would not exceed the performance specifications of the bank stabilization. However, the soft bottom of the channel is vulnerable to down-cutting and scour. To decrease the channel velocities, the Project design includes grade stabilizer structures. Placement of grade stabilizer structures would allow the channel to reach equilibrium, defined as the condition where the amount of sediment deposited is equivalent to the sediment eroded.

Nearly the entire reach of Long Canyon Drainage within the RMDP will be filled and a new channel constructed at a new elevation. In accordance with the geomorphic basis of design, the final design approach is to preserve the existing channel as a back channel habitat area while creating an additional new channel sized to accommodate the changes in sediment and water delivery due to the build-out of the Newhall Ranch Specific Plan, except for a small portion of the drainage that will be preserved as a back channel habitat adjacent to the new channel at the existing channel grade.



Mitigation Hydrology Design Basis

Santa Clara River at Long Canyon Bridge Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
2 Year	2.7	Riverwash, Arrowweed / Mulefat Scrub

SOURCE: Newhall Land, 2011

FIGURE 15

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Santa Clara River Conceptual Mitigation Plan (at Long Canyon Bridge)

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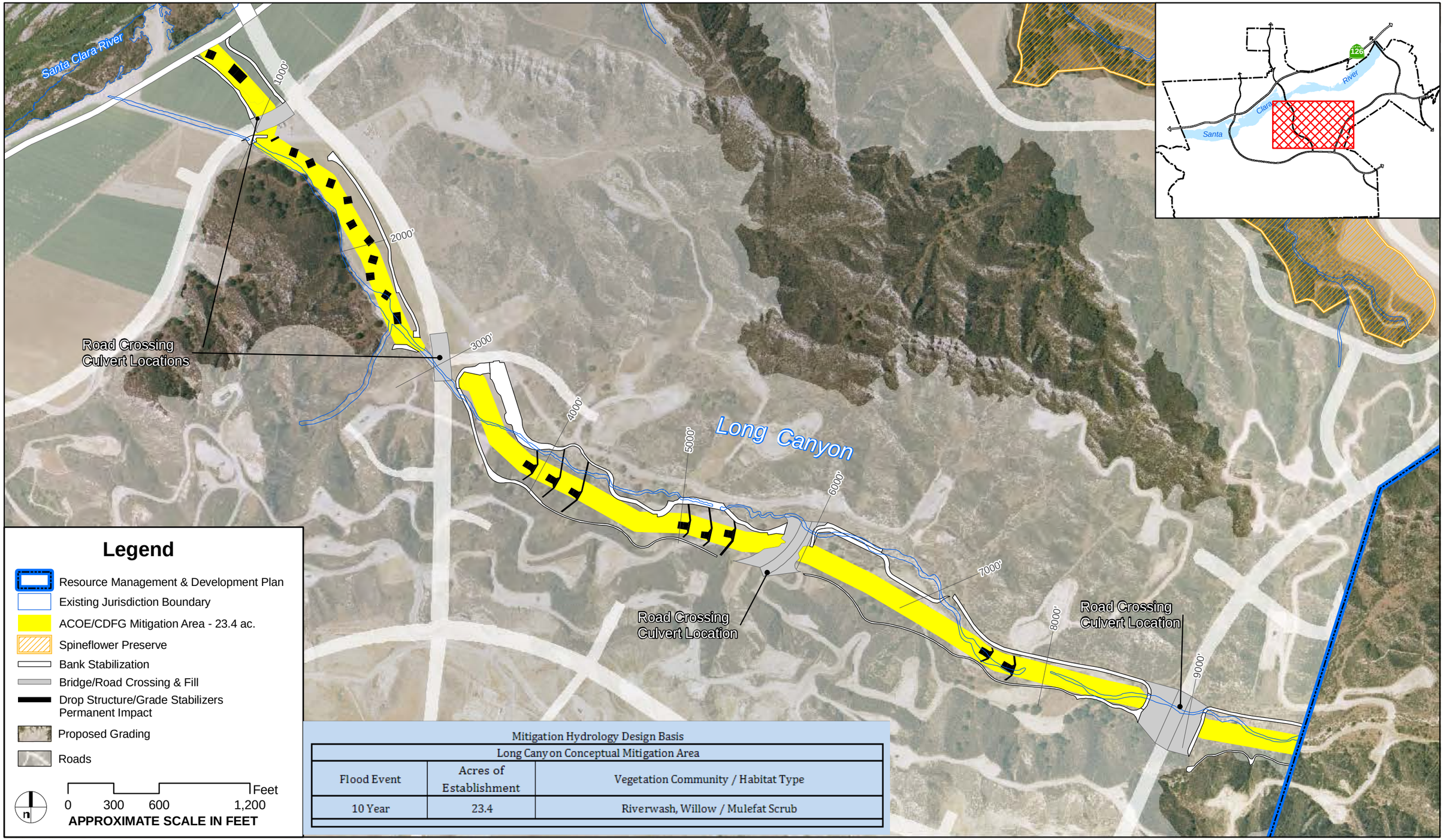

Mitigation Hydrology Design Basis

Long Canyon Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
10 Year	23.4	Riverwash, Willow / Mulefat Scrub

SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 16

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

LONG CANYON CONCEPTUAL MITIGATION PLAN

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The recommended approach for designing the reaches where valley grading is proposed involves breaking the valley into alternating long reaches that are at equilibrium grade and short reaches that are much steeper. This approach involves creating reaches of between 100 and 300 feet length where elevation drops of 10 to 30 feet occur (10% gradient). Concentrating the drop in these reaches using sequences of step-pools that will create a naturally functioning channel between the drops and reduce the number and aerial extent of rock structures. The Long Canyon channel design incorporates the calculated post-development equilibrium slope to ensure a dynamically stable condition allowing for more or less equal amounts of erosion and deposition.

The channel will be designed to support a similar complex of native vegetation communities as those that currently occur. Detailed, site-specific mitigation designs will be developed during the design phase, allowing for the creation of a variety of channel features to support diverse vegetation communities to replace impacted functions and values. The restoration approach would rely on the use of a temporary irrigation system and plant materials (seed and container plants) to establish vegetation. The construction of the channel uses standard engineering techniques to achieve a stable design and will provide suitable soils and hydrology for target plant communities.

Temporary Corps jurisdictional impacts would be mitigated through restoration of vegetation communities at the temporary impact site that is equivalent to the impacted vegetation. The intent of restoration of temporary impact areas is to restore the aquatic functions and services that were present prior to impacts (although in some instances, the values attributable to adjacent uplands will necessarily change. The critical design feature for achievement of this goal is post-construction recontouring to ensure that the temporary impact areas are restored to pre-impact elevations and contours. Successful recontouring following construction would reestablish the hydrologic connections and/or groundwater relationship that existed prior to construction.

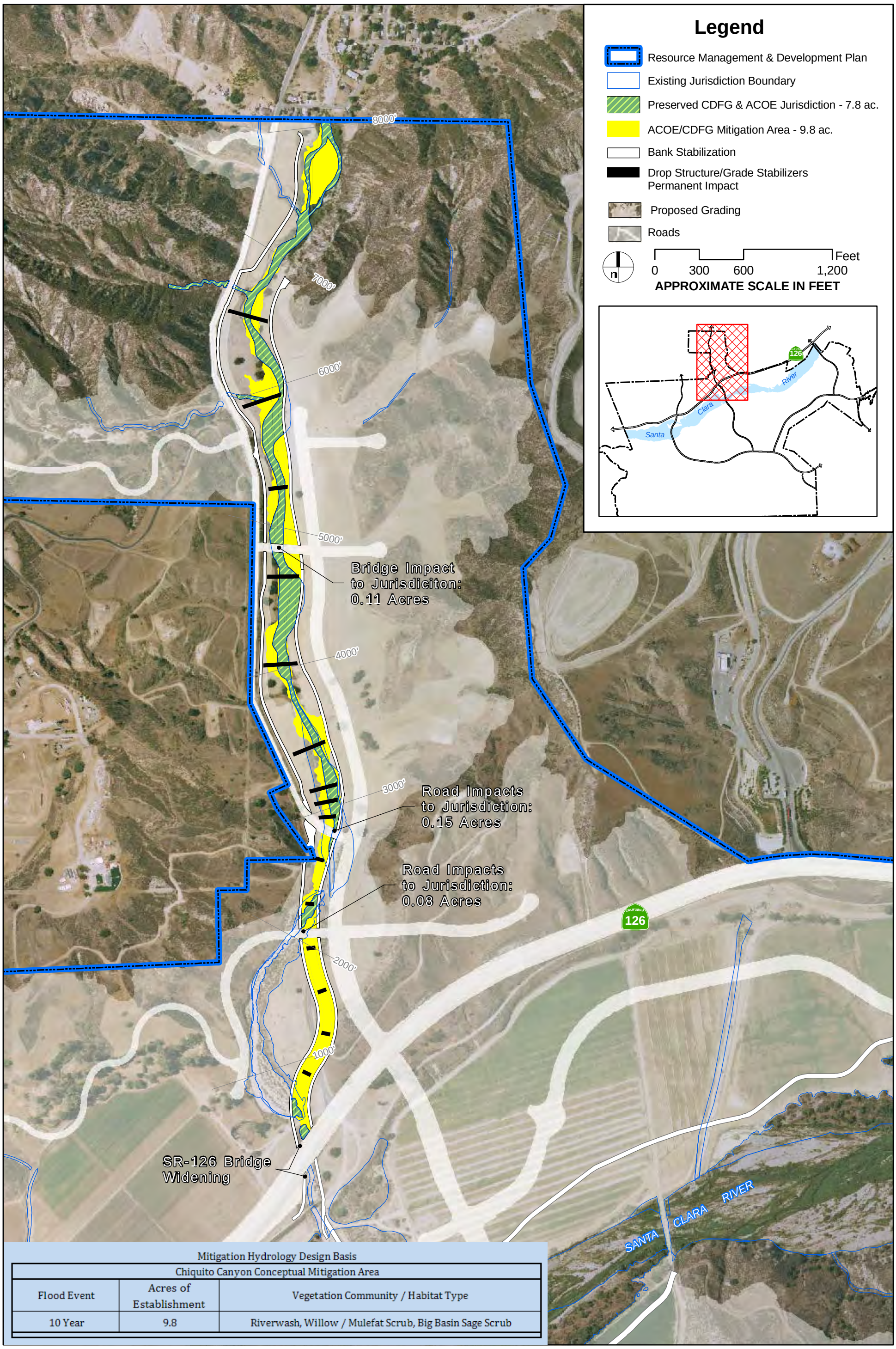
2.2.10 Chiquito Canyon and San Martinez Grande Canyon

The design approach for mitigation in Chiquito and San Martinez Grande canyons is a general treatment of on-site impacts to tributary drainages. Tributary drainages that would be impacted and reestablished include Chiquito Canyon and San Martinez Grande Canyon. Portions of these drainage channels must be filled to facilitate the proposed design strategy for the RMDP. The mitigation design is expected to create approximately 9.8 acres of jurisdictional area in Upper and Lower Chiquito Canyon (Figure 17) and 6.8 acres in San Martinez Grande Canyon (Figure 18).

The Project would be designed to reduce Project effects to the geomorphic stability (i.e., erosion and deposition) within Chiquito and San Martinez Grande canyons. Specifically, where the

channels are not degraded and less extensive development would take place in the watershed, grade control structures would be used to maintain the existing slope. The reengineered channels would be designed to meet the specified basis of design criteria using the following approach:

- Develop existing condition floodplain and creek hydraulic characteristics using a hydraulic model such as HEC-RAS.
- Minimize impacts to existing condition floodplain. As a result of reducing the development impacts to the floodplain, the amount of environmental and hydraulic impacts (e.g., substantial erosion or sediment deposition) from the proposed RMDP would be minimized.
- Creek bank flood protection (e.g., soil cement, rip rap, or other suitable method) would be located to provide for bank erosion protection and flood protection from the DPW Capital design flood event. In most cases, the bank protection would be buried with soil at a 3:1 slope over the hard bank protection. The soil backfill slope would vary from flatter to steeper and may be totally eliminated in some areas where necessary, such as at structures, storm drain outlets, or other pinch points.
- The tributary canyons would not include a re-grading of the creek invert, although the Erosion Potential of the proposed condition would be validated during the final design phase. For both tributary canyons, the invert stabilization method would be as follows:
- Creek bed grade control structures at 200- to 400-foot spacing along the creek corridor would be included.
- These grade control structures would be designed to be located at points along the creek where proposed project grading impacts will already be disturbing the creek bed and banks.
- The grade control structures would be constructed with soil cement, rip rap, or other grade stabilization methods acceptable to DPW.
- The grade control structures would be at grade or below the existing grade and invert of the creek bed.
- The grade control structures would be designed to function as a drop structure in the event the creek bed slope flattens over time.
- The top and toe elevation would be established based upon DPW standards.



Mitigation Hydrology Design Basis

Chiquito Canyon Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
10 Year	9.8	Riverwash, Willow / Mulefat Scrub, Big Basin Sage Scrub

SOURCE: PACE 2010

FIGURE 17

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

CHIQUITO CANYON CONCEPTUAL MITIGATION PLAN

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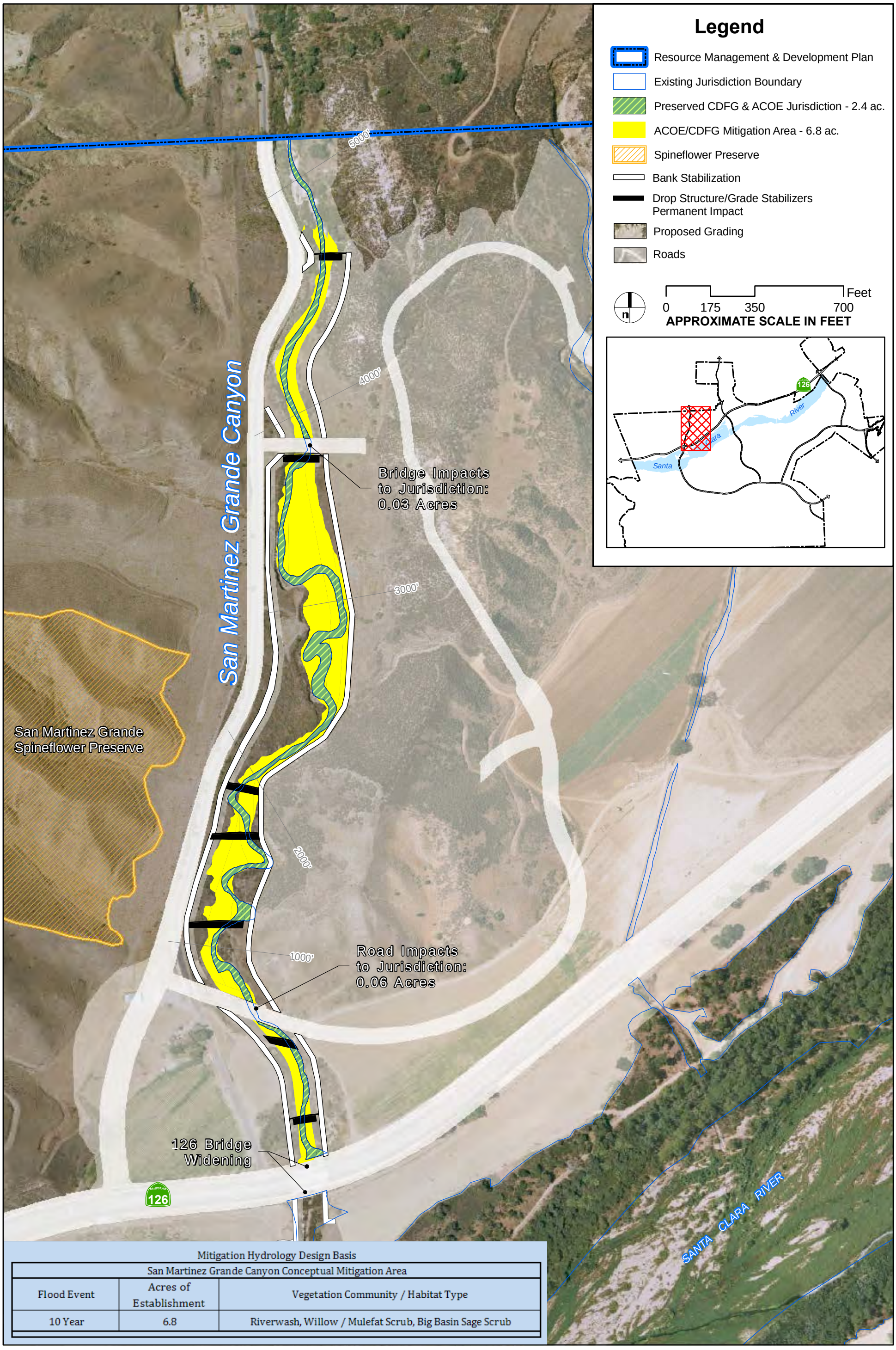

Mitigation Hydrology Design Basis

San Martinez Grande Canyon Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
10 Year	6.8	Riverwash, Willow / Mulefat Scrub, Big Basin Sage Scrub

SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 18

Mitigation and Monitoring Plan For Impacts to Waters of the United States for the Newhall Ranch RMDP

SAN MARTINEZ GRANDE CANYON CONCEPTUAL MITIGATION PLAN

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The overall design approach would allow the tributaries to naturally fluctuate between the stabilized existing condition and estimated equilibrium slope while providing suitable erosion and flood protection for public safety. The channel confluences with the Santa Clara River would largely be controlled by the aggradation or degradation in the Santa Clara River, as well as episodic river hydraulic events in the form of backwater effects. The influence of the Santa Clara River on long-term bed stability at the creek channel outlets is expected to exceed that of the Project channel modifications. In both tributaries, the upstream channel inlets (near the beginning of the defined channels) are generally in a natural state, and no improvements would be made in the upstream portions of the channels.

The channels will be designed to support a similar complex of native vegetation communities as those that currently occur. Detailed, site-specific mitigation designs will be developed during the design phase, allowing for the creation of a variety of channel features to support diverse vegetation communities to replace impacted functions and values. The restoration approach would rely on the use of a temporary irrigation system and plant materials (seed and container plants) to establish vegetation.

Temporary Corps-jurisdictional impacts would be mitigated through restoration of vegetation communities at the temporary impact site that is equivalent to the impacted vegetation. The intent of restoration of temporary impact areas is to restore the areas to support the same vegetation communities that were there prior to impacts. The critical design feature for achievement of this goal is post-construction recontouring to ensure that the temporary impact areas are restored to pre-impact elevations and contours. Successful recontouring following construction would reestablish the hydrologic connections and/or groundwater relationship that existed prior to construction.

2.2.11 Potrero Canyon Riparian Mitigation

Riparian mitigation within Potrero Canyon includes a restoration of temporary impacts and establishment of new jurisdictional areas (Figure 19). The Potrero canyon riparian mitigation area is expected to create approximately 14 acres of jurisdictional area.

In accordance with mitigation measure SP-4.2-3, hydraulic modeling will be performed for the final design to assess the effects within Potrero Canyon, and the design will be modified as necessary to reduce any erosion or deposition impacts. The Potrero Canyon channel design incorporates the calculated post-development equilibrium slope to ensure a dynamically stable creek bed condition allowing for more or less equal amounts of erosion and deposition. The design will utilize boulder step-pool structures, and biotechnical stabilization to enhance and

restore the drainage. The land surrounding the channel would be revegetated with associated riparian plant communities, as well as upland plant communities, to increase the habitat-related functions and values of the drainage channel.

Varying creek stabilization approaches will be taken in the reaches because of differences in existing channel condition as described in the EIR/EIS. Reach 1 (most downstream reach) is deeply incised because it was realigned and straightened from its original location since 1940. In this reach the southwest bank will be regraded to restore a floodplain bench adjacent to the channel (see cross section Sta 20+41). Reach 1 will require the greatest number of step-pool structures due to its incised condition, steeper existing gradient and the fact that as the most downstream reach it will experience the greatest effects of watershed change. In Reach 2 the emphasis will be on minimizing impacts to the existing CAM by making the step-pool structures as small as possible. In Reaches 3 and 4 the goal will be to maximize the conveyance of naturally-generated sediment from the watershed so as to maintain a gradient as close as possible to existing levels.

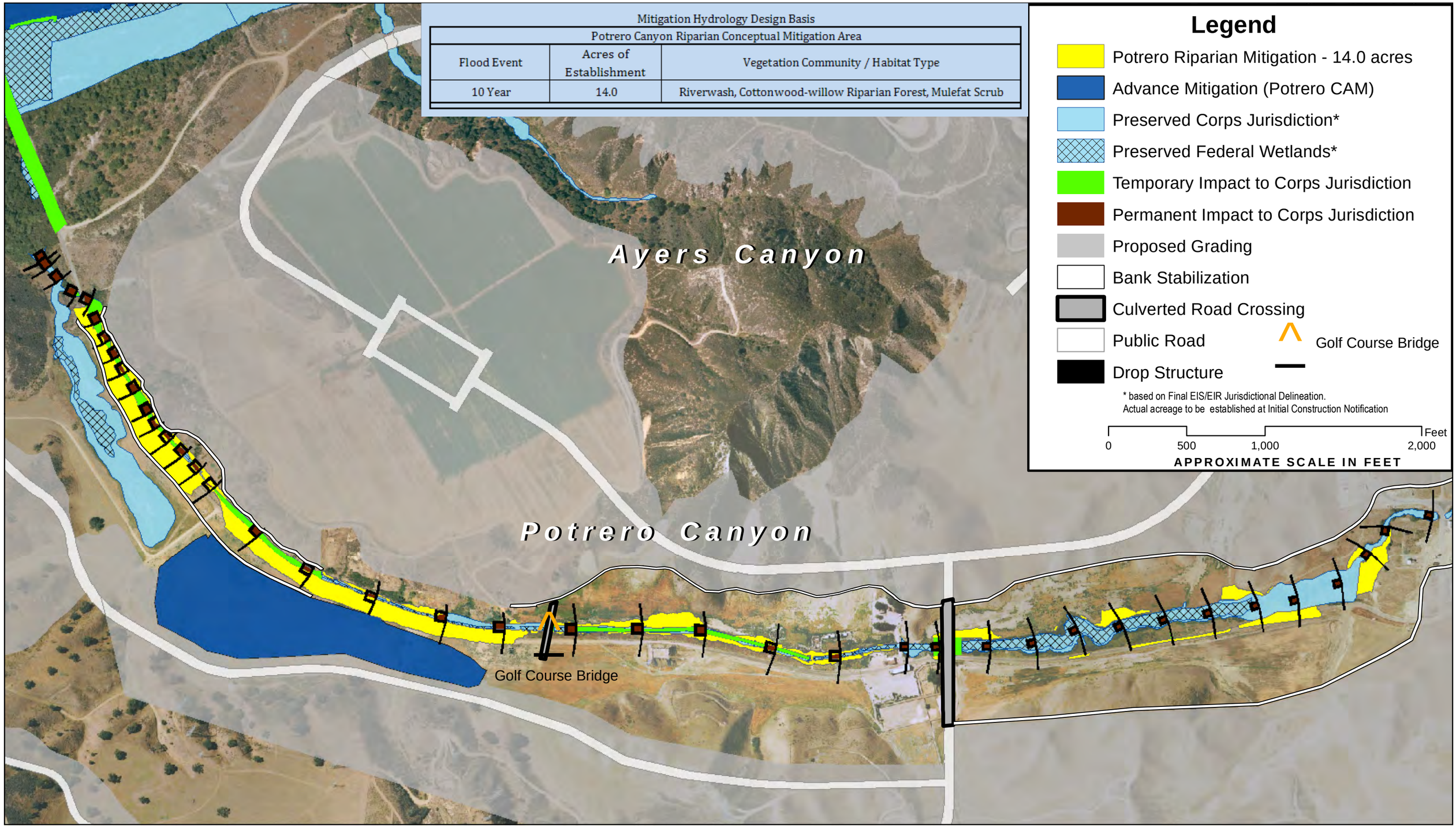
Approximately 60 structures with an average height not to exceed 4 feet and a maximum height not to exceed 5 feet will be required. The most common structure will be a 3 foot high step-pool structure constructed of nongrouted boulders and containing some form of subsurface seepage control such as a buried vinyl sheet pile to prevent internal piping of soil through the boulders.

Creek crossings in Potrero Canyon will be constructed using at-grade, arch culverts with soft bottoms. Each crossing will have a boulder step-pool located immediately upstream and downstream to allow a stable channel gradient to form beneath the culverts (these will likely be grouted boulder step-pool structures due to the need to protect the culvert footings).

The restoration of temporary impacts would include reestablishing the drainage channel in Potrero Canyon after implementation of stabilization measures where the channel bed is unstable in its current configuration. A detailed, site-specific mitigation design would be developed during the design phase, allowing for the creation of a variety of channel features to support diverse vegetation communities to replace impacted functions and values. Channel design can recreate a variety of flow gradients that support various vegetation communities. The control of soil substrate would allow for the installation of low permeable layers that perch groundwater to create localized wetland areas. Soil salvage may be used when on-site soils are unique and conducive to the establishment of specific vegetation types.

Mitigation Hydrology Design Basis

Potrero Canyon Riparian Conceptual Mitigation Area		
Flood Event	Acres of Establishment	Vegetation Community / Habitat Type
10 Year	14.0	Riverwash, Cottonwood-willow Riparian Forest, Mulefat Scrub



SOURCE: Newhall Land, 2011

FIGURE 19

Mitigation and Monitoring Plan for Impacts to Waters of the United States for the Newhall Ranch RMDP

Potrero Canyon (Riparian) Conceptual Mitigation Plan

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2.2.12 Implementation Components

The following site design components are common to each mitigation site except as noted.

- **Site Grading**. Grading and contouring will be implemented to create appropriate hydraulic relationships to the subsurface groundwater and adjacent drainage channel. Site grading is anticipated to have approximately 4–10-foot cut depths (appropriate hydraulic relationship will be validated through detailed topographic survey and hydrology studies).
- **Grade Control Structure**. Grade control structures will be used for selected jurisdictional areas mitigation sites including Lion, Long, Potrero, and Salt Creek. These structures serve multiple purposes. The upstream effect of the structure is intended to maintain a grade stable creek bed that is not subject to head cutting, even if downstream channel incision is present. Structures can also increase resident time and water percolation. The downstream objective of these structures is to more evenly distribute and direct creek flow across a mitigation site.

  In general, the structures will be constructed at existing natural grade so that the crest is flush with the existing ground surface and the toe is buried below grade. Once constructed the pools, toes and protective toe ramps will be reburied under native soils and planted with native vegetation, with a channel that matches existing dimensions cut through the native soil to form a pilot channel above the pool and toe.

  To prevent the creek from avulsing around steps and downcutting, the structures will typically have at-grade non-grouted buried boulder wings that extend up the channel banks tie them into a point on the valley floodplain where erosive stresses are adequately low to be non-erosive during the Capital Flood. These wing walls will also be covered with soil, and revegetated using native vegetation baffles to provide floodplain roughness (willows or shrubs aligned perpendicular to flow across the floodplain).
- **Surface Water Inlet**. Where no grade structures are present, surface water inlets and outlets will be allowed to occur in dynamic equilibrium with the existing Creek channel.
- **Boundary Fencing**. Mitigation includes installation of permanent exclusion fence around existing and proposed jurisdictional areas to exclude grazing animals and prevent undesired agricultural or ranching activity.
- **Initial, interim and long term weed management program**. A combination of weed control methods will be employed, including chemical, mechanical and manual control, as appropriate. The site will be subject to an aggressive site preparation weed treatment program prior to planting to address the extensive weed seed bank.

- **Initial seed and plant installation using appropriate species** (Tables 9–19). Plant materials used to implement the planting plan will include seed, live cuttings, bio-engineered materials such as willow wattles, and container plants. Container plants will generally include liners and 1-gallon container stock propagated from Salt Creek seed collections. Specific locations for installation will be designated on planting plans or marked on site temporarily with pin flags by the project biologist. Seed will be collected from the RMDP area.
- **Temporary Irrigation System.** Selective temporary irrigation will be installed to support initial seed and plant establishment, as needed. The irrigation system will be an on-grade, overhead spray design.
- **Interim monitoring and maintenance program with appropriate remedial actions.** A mitigation monitoring program will be developed to support collection of appropriate botanical, vegetation, and hydrology data that directly relate to mitigation performance metrics. Monitoring data and observations will provide essential feedback for effective adaptive management decisions to be made and implemented during the 5-year vegetation establishment and success criteria monitoring period for each site.
- **Ecological Performance Metrics.** Appropriate ecological performance metrics will be established through measurement of a reference reach in each canyon. Similar pre-impact ecological functional measurements were made within tributary impact areas using HARC methods. The performance metrics will be based on comparative functional assessment protocols as defined in the HARC methodology (Appendix B). The metrics will be used to inform mitigation site evaluations adaptive management and remedial actions to maintain the vegetation establishment trajectory toward achievement of ultimate performance criteria.
- **Long term management with monitoring component and management actions.** The mitigation sites will become part of the RMDP preserve through the establishment of a conservation easement to CDFG and transfer of fee ownership to Center for Natural Lands Management for perpetual land stewardship. The mitigation site will be managed in accordance with the RMDP.

2.3 Time Lapse between Jurisdictional Impacts and Expected Compensatory Mitigation Success

This mitigation program is designed to minimize temporal loss associated with RMDP impacts through advance mitigation and concurrent mitigation projects. Advance mitigation will be implemented prior to permanent RMDP jurisdictional impacts. Subsequent mitigation projects

will be implemented concurrently or within 2 years of impacts from the RMDP project with which they are associated.

2.4 Special Aquatic Habitats, Other Waters of the United States, and Non-Jurisdictional Areas Proposed as Compensatory Mitigation

The areas of the tributary canyons that are designated for the establishment of Corps-jurisdictional areas will be designed to be located within a riparian corridor that will also include vegetation communities established as mitigation for impacts to CDFG jurisdictional resources. The established CDFG jurisdictional areas will provide a native buffer around the Corps-jurisdictional establishment areas. While no specific acreage mitigation credit has been allocated for the establishment of these native buffers, the native buffers will improve the functions and services of the Corps areas. The functions and services that will be provided by native buffers include greater average buffer width, improved buffer condition, improved floodplain connection, improved flood-prone area, and greater interspersion and zonation.

2.5 Overall Watershed Improvements to be Gained

The planned mitigation projects will be designed to provide overall watershed improvements. Such improvements include:

- A reduction of tributary channel incisement with the incorporation of engineered drop structures and flood flow attenuation materials.
- Improved tributary hydrologic regime through creek bed stabilization that promotes increased surface water persistence and groundwater recharge.
- Improved riparian corridor connectivity between the river and tributary drainages through replacement of existing agricultural ditches with restored riparian channels.
- Improved floodplain connectivity through the establishment of riparian buffers and the stabilization of eroded and incised channel banks.
- Increased interspersion and zonation with the establishment of a greater variety of plant zones.
- Reduced exotic vegetation through long-term management. Control of exotic vegetation within the mitigation areas will not only improve the functions and values of the on-site mitigation areas but also of habitat areas downstream of the project areas by minimizing the release of weed propagules downstream.
- Greater topographic complexity and biochemical processes through design engineering of channel gradients and flood-prone buffers.

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3.0 DESCRIPTION OF THE PLANNED COMPENSATORY MITIGATION SITES

3.1 Process of Selecting Mitigation Sites

Mitigation within tributary drainages (with the exception of Salt Creek) was designed to maintain the geographic distribution of jurisdictional resources within the major tributary canyons and along the Santa Clara River. The selection of the major tributary drainages was also based on RMDP design considerations. The design of these jurisdictional drainages takes into account the existing hydrologic regime in each canyon.

Mitigation areas were selected through a comprehensive evaluation process described in detail in the Revised Draft Newhall Ranch Mitigation Feasibility Report (Dudek 2007b). To maintain consistency with the *Hybrid Functional Assessment of Wetland and Riparian Habitats for the Newhall Ranch Habitat Management Plan* (HFA; URS 2004; revised and now referred to as HARC), Dudek divided the stream channels within the RMDP into reaches, as in the HFA, for discussing mitigation potential. A total of 57 reaches were evaluated within the RMDP, with 46 occurring within proposed open space and preserve areas. Stream reaches within the tributary canyons (with the exception of Salt Creek) were evaluated separately from this study.

Dudek considered three types of mitigation potential: wetlands enhancement, stream bank stabilization restoration, and jurisdictional establishment. For wetlands enhancement, the percent cover of non-native, invasive plants was estimated in wetland vegetation communities in potential wetlands enhancement areas within the RMDP. For the Santa Clara River, there are substantial wetlands enhancement opportunities in various wetland vegetation communities. However, due to the extensive effort required to estimate and map invasive plant cover percentages, and the high potential for this to change between the present conditions and future implementation, specific enhancement opportunities were not evaluated in the Santa Clara River and associated riparian vegetation communities, but could be assessed during the preparation of site-specific mitigation plans.

For riparian vegetation establishment, Dudek evaluated the suitability of potential mitigation opportunities in the RMDP based on several factors pertinent to determining suitability of mitigation projects, including hydrology, soil conditions, existing vegetation, habitat connectivity, stream bank stability, construction/maintenance access, grading requirements, planting and irrigation requirements, mitigation credit, and long-term management considerations. The criteria were prioritized based on their suitability for jurisdictional establishment mitigation and are described in more detail below.

Hydrology

Hydrology is the most critical factor in determining potential suitability for jurisdictional establishment. Hydrology along each of the reaches in the RMDP was evaluated based on a number of factors, including the location in the watershed, presence and/or persistence of surface water, source of water, and amount of surface water. Potential sites with the presence and/or persistence of surface water, a natural water source, and a higher amount of surface water were considered to have greater restoration potential and were therefore ranked higher in this analysis. The HFA classified each of the reaches as ephemeral, ephemeral/intermittent, riverine persistent, or perennial. The HFA classifications for each stream reach were taken into consideration when evaluating and ranking hydrology.

Soil Conditions

Soil conditions were evaluated based on the type of soils present, which relates to erosive potential and water holding capacity, presence of organic matter, and soil disturbance. In general, soil types throughout the RMDP were of the same general type, Balcom-Castaic-Saugus association, which is a combination of silty clay loam and loam. The soils are derived from weakly consolidated sediments, soft sandstone, and soft shale and are generally highly erosive and well drained. In the upper reaches (higher elevations), there seemed to be a greater composition of rock in the soil; however, the soil remained unconsolidated and highly erosive.

Other soil types present in more limited areas include Chino loam, which occurs on nearly level land. It is a deep soil with a seasonally high water table present within 3 to 4 feet from the surface. This soil type is suitable for wetland mitigation. Sandy alluvial land, Cortina sandy loam, Hanford sandy loam, Sorrento loam, and Yolo loam are soils found along the Santa Clara River and its tributaries and are generally suitable for wetland mitigation. Castaic and Saugus soils are other soil types found in potential mitigation areas that are severely eroded and highly erosive.

In this analysis, soils with lower erosion potential, greater water holding capacity, higher presence of organic matter, and less soil disturbance were considered to have greater suitability for jurisdictional establishment/restoration. However, nearly all soils within the RMDP appeared to have high erosion potential and high soil disturbance.

Existing Vegetation

The existing vegetation was evaluated based on the vegetation communities present; age and structural heterogeneity, including canopy development; presence of non-native, invasive plants; and riparian corridor connectivity. Potential mitigation sites adjacent to stream channels with

intact native wetland vegetation, diverse age and structural heterogeneity, a well-developed tree canopy, lack of non-native invasive plants, and the presence of a riparian corridor were ranked higher in this analysis based on the rationale that if these conditions are present, then there are potentially adequate conditions to create additional riparian habitat.

Habitat Connectivity

For potential wetlands enhancement areas, this criterion was evaluated based on connectivity of riparian habitat to adjacent transitional upland habitats. For potential jurisdictional establishment areas and stream bank stabilization areas, this criterion was evaluated based on connectivity of the restored riparian habitat after the hypothetical installation of the mitigation areas. The level of disturbance of the transitional uplands habitat was the primary consideration. Potential sites with degraded vegetated buffers dominated by non-native vegetation are more vulnerable to erosion and more likely to contribute weed seed to potential mitigation sites. Therefore, sites with native vegetated buffers were ranked higher than those with degraded, non-native buffers. An additional consideration was connectivity to permanent unnatural features such as roadways or developed areas. Adjacency to these types of areas was ranked moderate based on the fact that roadways or developed areas are less likely to be vulnerable to erosion but, depending on how edge areas are planted/maintained, can be more or less likely to contribute weed seed to potential mitigation sites.

Stream Bank Stability

A general assessment of channel morphology was conducted to identify areas with the highest stream bank stability. Features that provide insight into this issue include the presence of cut banks, slip faces, underfit/overfit stream courses, degree of braided flow, and bed grain size. The stability of the stream banks along each of the reaches was evaluated based on the development of flood plain terraces, angle of the bank cuts, and stability of the bank soils. Areas with stream banks that have multiple terraces, gentle angles on the bank cuts, and more stable bank soils were considered more suitable, and ranked higher, than those without terraces, steep bank cuts, and instable bank soils.

Construction/Maintenance Access

Each of the reaches was evaluated based on construction and/or maintenance access to potential mitigation sites. The presence of roads that are suitable for grading equipment was a key factor in the identification of wetland establishment sites. Sites that are adjacent to existing roads or

those that could be easily accessed from existing roads were considered more suitable potential jurisdictional establishment/restoration sites than sites that are inaccessible to vehicles.

Grading Requirements

The amount of grading required to construct potential jurisdictional establishment/restoration sites was evaluated. Potential sites where minimal grading would be needed to achieve establishment/restoration goals were considered more suitable sites and were therefore ranked higher than potential sites that would require extensive grading. No detailed calculations were made to determine actual volume of material that would have to be removed to restore or create riparian vegetation communities. Estimations of grading requirements were generally based on the depth of cut required and the surface area to be graded.

Irrigation Availability

Irrigation availability was evaluated along each reach. Potential jurisdictional establishment/restoration sites with access to a potential irrigation source were ranked higher than those without.

Mitigation Credit

The amount of acreage available for jurisdictional mitigation credit was evaluated at each potential site. Areas where greater mitigation acreage could be achieved were ranked higher than sites that would result in minimal mitigation acreage. In general for this factor, sites less than 1 acre were ranked low, sites between 1 and 5 acres were ranked moderate, and sites greater than 5 acres were ranked high.

Long-Term Management Considerations

Long-term management considerations include issues that could create long-term management problems in the future after the installation of mitigation sites. Factors evaluated for each potential jurisdictional establishment/restoration site include the degree to which a site would be self-sustaining in the long term, potential for reinvasion of non-native invasive plant species, future access constraints, and potential to be subject to damage from flooding or to contribute to flooding in unwanted areas. Sites that would be self-sustaining, have minimal potential for reinvasion of invasive non-native plant species, provide uninhibited long-term access, and be less prone to damage from flooding or contribute flooding in unwanted areas were considered to have greater suitability in terms of minimizing long-term management problems and were therefore ranked higher in this analysis.

Based on site investigations and considering the above factors, it was determined that the mitigation opportunities along the margins of the Santa Clara River, including Mayo Crossing, and Salt Creek, provided the best opportunities for jurisdictional establishment outside of the RMDP development areas.

3.2 Location of Compensatory Mitigation Sites

Temporary and permanent jurisdictional impacts will be mitigated as described above. The locational information of each of the planned mitigation sites is summarized in Table 8.

Table 8
Mitigation Site Locations

Mitigation Locations	Latitude	Longitude	USGS 7.5-Minute Map	Township	Range	Section
Mayo Crossing	-118.673˚	34.407˚	Val Verde	T4N	R17W	28
Potrero Canyon CAM	-118.664˚	34.395˚	Val Verde	T4N	R17W	27
Salt Creek Enhancement/Creation	-118.684˚	34.390˚	Val Verde	T4N	R17W	28
Santa Clara River at Long Canyon Bridge	-118.634˚	34.420˚	Val Verde	T4N	R17W	23
Lion Canyon	-118.623˚	34.416˚	Newhall	T4N	R17W	24
Long Canyon	-118.642˚	34406˚	Val Verde	T4N	R17W	22
San Martinez Grande Canyon	-118.669˚	34.417˚	Val Verde	T4N	R17W	26
Potrero Canyon Drainage	-118.640˚	34.397˚	Val Verde	T4N	R17W	27

3.3 Ownership Status

All land within the RMDP area is owned in fee title by Newhall Land. Land ownership includes all water rights associated with each parcel.

3.4 Existing Functions and Values of Compensatory Mitigation Sites

The existing functions and values of compensatory mitigation sites vary but generally include two sets of conditions. One set of conditions pertains to the tributary drainages that will be graded and reconfigured as a component of the RMDP in order to accommodate construction techniques that are necessary to stabilize the RMDP area. These tributary drainages currently provide typical functions and values commensurate with moderately to severely disturbed intermittent and ephemeral drainages in the region, as described in **Section 1.5**. However, due to the proposed design to reconfigure the tributary drainage channels, the existing functions and values will be temporarily lost and then replaced with the implementation of the planned mitigation.

The other set of conditions present at planned mitigation sites pertains to the mitigation areas that are planned along the Santa Clara River (including Mayo Crossing) and Potrero Canyon CAM and Salt Creek. In these instances, the existing functions and values of the planned mitigation areas are typically very low because the current land use is agriculture (Santa Clara River and lower portions of Salt Creek) or grazing (Potrero Canyon CAM and Salt Creek). Under these land uses, the land is repeatedly disturbed and therefore does not support native vegetation communities and associated functions and values.

3.5 Present and Proposed Uses of the Compensatory Mitigation Sites

Past and current land uses at each of the mitigation sites differ. Mitigation sites within the RMDP are described below:

Advanced Mitigation Areas

Current land uses at the Potrero Canyon, Mayo Crossing, and the Salt Creek mitigation areas include agricultural land (particularly in the lower reaches of the Salt Creek area) and ranching and farming facilities such as access roads and creek crossings. The planned Mayo Crossing mitigation area is an active, intensive agricultural area that occurs within the Santa Clara River corridor. Once implemented, the mitigation areas within Potrero Canyon, Salt Creek and at Mayo Crossing are planned as conserved open space as part of the RMDP.

River Mitigation at Long Canyon Bridge

At present, the planned jurisdictional establishment mitigation area adjacent to the Santa Clara River is under active agriculture. Once implemented, these mitigation areas are planned as conserved open space as part of the RMDP.

Tributary Canyon Mitigation Sites

Current land uses at the Lion, Long, Potrero, Chiquito Canyon and San Martinez Grand Canyon mitigation sites include a combination of open space, grazing, and oil and gas extraction activities. Ranching and energy facilities within these canyons include access roads, creek crossings, and well pads. Once implemented, these mitigation areas are planned as conserved open space as part of the RMDP.

4.0 IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITE

Implementation of the mitigation design requires a series of coordinated, progressive steps to properly install the planned mitigation projects. Many of these steps are prerequisites for subsequent activities to occur. This section describes the steps that are necessary to implement this mitigation plan.

4.1 Rationale for Expecting Project Success

The rationale for expecting project success includes the implementation of restoration designs that consider and incorporate appropriate conditions for the establishment and sustainment of the target vegetation communities. Grading and contouring designs and their successful implementation will be integral to project success to ensure that elevations are established that will allow dynamic interaction with subsurface low flows, the water table, and periodic seasonal flooding.

To support the success of the restoration designs, the individual mitigation projects will be planted with species that are successfully growing in adjacent native areas and within the watershed. Vegetation communities will be appropriately located in accordance with their respective water needs, with less hydric vegetation communities being located in transitional upland locations and more hydric vegetation communities being located closer to anticipated surface and subsurface flows or groundwater. Further, the sites will be maintained for a period of 5 years to control non-native species. Site-specific restoration tools will also be utilized as appropriate, including temporary irrigation systems, rock gabions, berms, riprap, or other features designed to retain, entrain, or convey surface water flows.

Where mitigation is proposed within the tributary drainages, vegetation communities associated with these drainages will be successfully mitigated through establishment of comparable vegetation communities. The channel and mitigation designs support the conclusion that all representative vegetation communities present and replacement ecological functions and services can be successfully established in the project context. The following factors support this conclusion:

- The mitigation sites will tie in to existing hydraulic inputs, essentially extending the existing hydraulic regime of the tributary channels into the mitigation site. Therefore, the runoff hydrograph of storm events will remain similar in intensity and duration as presently observed and recorded in the existing drainages with similar scour and deposition functions as the impacted channel. This hydrology function is key to

establishing self-sustaining vegetation communities, such as mulefat scrub, southern willow scrub, southern cottonwood–willow riparian forest, and unvegetated streambed.

- In instances where soil characteristics may be critical to the resulting habitat supported by the reconstructed channel (e.g., Long Canyon), soil salvage and replacement may be implemented, where feasible. Soil salvage will be implemented in these instances to provide comparable grain size distribution within the constructed channel bottom. Soil salvage and replacement will be used to create a similar soil profile as found in the impacted stream course. This profile will have similar percolation and water retention characteristics as the impacted channel. The soil profile restoration is an essential factor in differentiating native communities along the stream course, and this physical characteristic will be recreated in the constructed channel.
- Channel designs incorporate grade structures that provide multiple services to the associated vegetation communities. Channel structures will create subsurface hydrology variability that will effectively create moisture gradients that support the desired range of native vegetation communities. Subsurface moisture retention is anticipated to be greatest immediately upstream of these structures. The resultant mesic pockets at these locations will support southern cottonwood–willow riparian forest and southern willow scrub vegetation communities. Drier soil conditions and retreating groundwater resources upstream of the structures will favor mulefat scrub and other ephemeral drainage vegetation communities that are capable of persisting without reliable subsurface water. The most xeric conditions are anticipated to occur between grade structures. Coarse bed materials placed at these locations will create non-vegetated waters of the United States. These areas serve as groundwater percolation sites that replenish local groundwater. The high percolation rates associated with these areas will maintain the channel in a non-vegetated state that is typical of many channel reaches in the tributaries.
- A variable channel width will be used to create areas of scour and deposition that are characteristic of the existing canyon. Scour and deposition are important functions that specific vegetation communities rely upon to persist in a particular location. Providing a variety of scour and deposition features will support diverse vegetation communities.
- A layer of semi-permeable material, such as clay, may be used to enhance subsurface water storage and resources for riparian vegetation where southern cottonwood–willow riparian forest and southern willow scrub are planned. This technique is used to perch water resources within the root zone of wetland species.
- Use of local plant materials will maintain the genetic integrity and species diversity found within tributary canyons.

4.2 Responsible Parties

The responsible parties identified in **Section 1.1** also apply to this section.

4.3 Financial Assurances

Implementation of the mitigation and 5-year maintenance and monitoring programs according to the specifications described herein will be funded through performance bonds or other approved financial assurance mechanism in accordance with the Corps Permit, for each mitigation area. Additional bonds will be issued as each mitigation area is implemented and shall include mitigation implementation costs associated with mitigation final design, construction, planting, irrigation and maintenance, and performance monitoring and reporting.

The amount of security posted for each construction notification shall be based on the estimated cost of carrying out the mitigation measures and monitoring activities for that project. The permittee may request and obtain partial or final release of any established security upon demonstrating to the Corps and CDFG that mitigation, monitoring, and reporting obligations have been satisfied for a project, or portion thereof. Updated security cost estimates and a replacement security may be submitted as necessary to carry out those activities yet to be fully satisfied. The Annual Mitigation Monitoring Report submittal shall be used for such requests.

It is anticipated that within 30 days of receiving a security proposal, a replacement instrument, or a request for partial or full release of an individual project security, the Corps shall, in writing: (1) review the cost estimates and adjust those estimates as needed to reflect the probable costs of carrying out, or completing, the required mitigation and monitoring measures; (2) review the request for partial or final security release; and (3) approve or deny the request for security replacement or release. Any denial of a security shall be in writing, with a reason for the decision.

4.4 Implementation Schedule

Project implementation will vary as RMDP projects are brought forward for construction. In general, mitigation project installation will be timed to occur in the late fall/early winter prior to the onset of the rainy season. In some cases where extreme flood volumes and velocities are expected, such as in the Santa Clara River, installation will occur in late spring or early summer to allow for a period of plant establishment before the onset of the fall rainy season. Individual project timelines will vary depending on a variety of factors related to construction. A general sequential ordering of implementation tasks is shown below (as applicable to each individual project):

- Plant propagule collection and container plant propagation

- Initiate enhancement component of project, if applicable
- Salvage native plant materials for mulch
- Salvage topsoil from existing jurisdictional or non-wetland waters of the United States areas
- Salvage tree trunks over 12 inches in diameter at breast height 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 "grow and kill" cycles 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 maintenance and monitoring period.

4.5 Site Preparation

The following mitigation project elements will be considered and implemented, as appropriate, on each of the mitigation sites. The degree of application of these elements will be determined and defined in the site-specific mitigation plans that will be included in each construction notification package.

4.5.1 Special-Status Species Avoidance and Pre-Construction Wildlife Surveys

Prior to mitigation site clearing or vegetation removal, special-status species surveys may be necessary, depending on their potential to be present and previous survey efforts. These special-status species may include arroyo toad, California red-legged frog, American badger, unarmored threespine stickleback, arroyo chub, Santa Ana sucker, southwestern pond turtle, western spadefoot toad, coast horned lizard, silvery legless lizard, coastal western whiptail, rosy boa, San Bernardino ringneck snake, coast patch-nosed snake, burrowing owl, San Diego black-tailed jackrabbit, San Diego desert woodrat, mountain lion natal dens, active roosts of special-status bats, San Emigdio blue butterfly, ringtail, *Pyrgulopsis castaicensis* n. sp., trask shoulderband

snail, two-striped garter snake, south coast garter snake, and nesting birds. If necessary, special-status species surveys will occur in accordance with Newhall Ranch Specific Plan Program EIR (County of Los Angeles 2003) mitigation measures SP 4.6-53, SP 4.6-54, and SP 4.6-59; Final EIS/EIR mitigation measures BIO-17, BIO-18, BIO-41, BIO-43, BIO-46, BIO-50, BIO-53, BIO-54, BIO-56, BIO-57, BIO-58, BIO-60, BIO-61, BIO-65, BIO-83, BIO-86, and BIO-89; and project-specific mitigation measures.

4.5.2 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.

4.5.3 Erosion Control-Best Management Practices

Erosion prevention and sediment 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 Stormwater Pollution Prevention Program (SWPPP). Erosion prevention and sediment 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 best management practices (BMPs) during mitigation construction and grading and will provide periodic monitoring reports to Newhall Land.

The dynamic and volatile seasonal flow patterns of the Santa Clara River and some of its tributaries are responsible for the highly variable storm flow events in the project area. 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.

4.5.4 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. 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 1 week to 1 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 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 may 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.

4.5.5 Soil Salvaging

Following clearing and grubbing work, the topsoil may be salvaged from native vegetation areas impacted by project construction. If there exists a 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. 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 the region generally is relatively deep sandy alluvium, so removal of the top few inches should not negatively affect the edaphic conditions.

Soil shall be salvaged to a depth of 12 inches and stockpiled on site. 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 stockpile shall be clearly marked. 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-wide 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 minimized after irrigation installation and prior to planting.

Soil salvage and replacement is particularly important for mitigation sites where a buried bank structure is planned. Salvaging the topsoil will help improve edaphic conditions for native seed germination, plant growth, and native vegetation establishment within the mitigation areas. 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.

4.5.6 Grading and Site Preparation

Grading of the mitigation areas that require such activities will be accomplished during general site development and bank stabilization construction activities. Upon completion of bank protection construction work, the final grades within the restoration areas shall be established by grading the entire establishment area to elevations conducive to native habitat establishment. Topsoil salvaged during grading operations 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 by the project biologist 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 mitigation area will include swales and hummocks that mimic the natural environment. A low-flow channel will be 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 to 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 would be 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.

4.5.7 Weed Removal

This section addresses control of weeds within the project area during project installation. Prior to project installation, the mitigation sites must be free of invasive non-native annual grasses and forbs, as well as persistent perennial exotic species such as giant reed and tamarisk (*Tamarix ramosissima*). Mitigation sites that will require the existing soil to be removed and replaced will likely reduce the weed seed bank. 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.

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 begin with 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 herbicide is applied to kill target weeds. Additional "grow and kill" cycles may be required, as recommended by the project biologist.

Weed control will require a combination of physical, chemical, and cultural control methods. The project biologist will coordinate with the restoration contractor/pesticide applicator to identify specific locations where weed control is necessary and which control methods are appropriate for the site conditions and target species. Any chemical use should be conducted using methods that minimize effects to adjacent/desirable native species.

All weed control and removal work shall be performed in compliance with all applicable federal and state laws and regulations, safety precautions, and pesticide label directions. The restoration contractor shall possess a valid California Qualified Applicator Certificate or Qualified Applicator License, and Pest Control Business License or Maintenance Gardener Pest Control Business License, as appropriate for the situation.

The restoration contractor shall refer to the specific pesticide label for information on proper timing, application rates, and any use restrictions. The restoration contractor must follow all applicable label directions, laws, regulations, and safety precautions when performing weed

control. Should the restoration contractor require a specific weed control recommendation for any control effort, he or she shall consult a licensed pest control adviser for a written recommendation.

4.6 Planting Plan

The planting plan will vary for each mitigation area depending upon site-specific conditions related to hydrology and soils. More detailed planting plans will be defined in each site-specific mitigation plan to be submitted with each construction notification package. Representative plant palettes are shown in Tables 9–19. Planting will follow grading, installation of salvaged soil and mulch, irrigation system installation, and "grow and kill" weed-control cycles.

The plant palettes have been designed to represent the composition of species that occur within 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. However, site-specific adjustments (e.g., seeding rates, species composition) to these generalized planting palettes may be made as deemed appropriate by the project biologist.

Table 9
Southern Cottonwood–Willow Riparian Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Application Rate (pounds/acre)*
Ambrosia acanthicarpa	Annual bursage	60	1
Amsinckia menziesii	Yellow fiddleneck	25	1
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	California 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	caterpillar phacelia	80	1
Verbena lasiostachys	Western verbena	50	1
		Total pounds/acre	**23**

Table 9
Southern Cottonwood–Willow Riparian Plant Palette

Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Baccharis salicifolia	Mulefat	1 gallon	8
Ericameria palmeri var. *pachylepis*	Goldenbush	1 gallon	6
Leymus condensatus	Giant wild rye	1 gallon	6
Pluchea sericea	Arrow weed	1 gallon	8
Populus fremontii	Fremont cottonwood	1 gallon	20
Quercus agrifolia	Coast live oak	1 gallon	25
Rhus trilobata	Skunkbrush	1 gallon	4
Ribes aureum	Golden currant	1 gallon	6
Salix exigua	Sandbar willow	1 gallon	10
S. laevigata	Red willow	1 gallon	12
S. lasiolepis	Arroyo willow	1 gallon	14
Salvia mellifera	Black sage	1 gallon	6
Sambucus mexicana	Mexican elderberry	1 gallon	12

Table 10
Mulefat Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Ambrosia acanthicarpa	Annual bursage	60	1.0
Artemisia douglasiana	Mugwort	10	2.0
Iva axillaris	Poverty weed	15	2.0
Lessingia glandulifera	Lessingia	80	1.0
Phacelia cicutaria	caterpillar phacelia	80	1.0
Pluchea odorata	Marsh fleabane	15	0.5
Senecio flaccidus var. *douglasii*	Butterweed	5	5.0
		Total pounds/acre	**12.5**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Baccharis salicifolia	Mulefat	1 gallon	8
Eriodictyon crassifolium var. *nigrescens*	Yerba santa	1 gallon	6
Opuntia basilaris var. *ramosa*	Beaver-tail cactus	1 gallon	6
Pluchea sericea	Arrow weed	1 gallon	8
Ribes aureum	Golden currant	1 gallon	6
Salix exigua	Sandbar willow	1 gallon	10
S. lasiolepis	Arroyo willow	1 gallon	14

Table 10
Mulefat Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Sambucus mexicanus	Mexican elderberry	1 gallon	12

Table 11
Arrow Weed Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Ambrosia acanthicarpa	Annual bursage	60	1
Artemisia californica	California sagebrush	10	1
A. tridentata	Big sagebrush	10	2
Atriplex canescens ssp. *canescens*	Four-wing saltbush	35	1
Clarkia purpurea	Winecup clarkia	80	1
Eriogonum gracile var. *gracile*	Buckwheat	15	1
E. fasciculatum	California buckwheat	10	5
Leymus triticoides	Alkali rye	80	1
L. condensatus	Giant wild rye	70	2
Phacelia cicutaria	caterpillar phacelia	80	1
		Total pounds/acre	**16**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Baccharis salicifolia	Mulefat	1 gallon	8
Pluchea sericea	Arrow weed	1 gallon	8
Salix exigua	Sandbar willow	1 gallon	8

Table 12
Southern Coast Live Oak Riparian Forest Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Amsinckia menziesii var. *menziesii*	Yellow fiddleneck	25	1.0
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

Table 12
Southern Coast Live Oak Riparian Forest Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
E. fasciculatum	California 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	caterpillar phacelia	80	1.0
Trichostema lanatum	Woolly bluecurls	40	2.0
		Total pounds/acre	**35.0**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Juglans californica	Black walnut	1 gallon	20
Leymus condensatus	Giant rye grass	1 gallon	6
Marah macrocarpus	Wild cucumber	1 gallon	30
Opuntia littoralis	Coastal prickly-pear	1 gallon	6
Pluchea sericea	Arrow weed	1 gallon	8
Prunus ilicifolia	Holly-leaf cherry	1 gallon	12
Quercus agrifolia	Coast live oak	1 gallon	20
Rhus trilobata	Squaw bush	1 gallon	6
Ribes californicum	California gooseberry	1 gallon	6
Rosa californica	California rose	1 gallon	6
Sambucus mexicana	Mexican elderberry	1 gallon	12

Table 13
Arrow Weed Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/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

Table 13
Arrow Weed Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Lessingia glandulifera	Lessingia	80	1
Lupinus bicolor	Lindley's annual lupine	90	6
Phacelia cicutaria	caterpillar phacelia	80	2
		Total pounds/acre	**20**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Artemisia tridentata ssp. *parishii*	Sagebrush	1 gallon	6
Artemisia tridentata ssp. *tridentata*	Great basin sagebrush	1 gallon	6
Opuntia californica var. *parkeri*	Cane cholla	1 gallon	6
Eriodictyon crassifolium var. *nigrescens*	Yerba santa	1 gallon	6
Eriogonum fasciculatum	Flat-topped buckwheat	1 gallon	6
Malacothamnus fasciculatus	Chaparral mallow	1 gallon	6
Prunus ilicifolia	Holly-leaf cherry	1 gallon	10
Quercus agrifolia	Coast live oak	1 gallon	25
Yucca whipplei	Our Lord's candle	1 gallon	6

Table 14
California Sagebrush Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/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	California 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	caterpillar phacelia	80	1

Table 14
California Sagebrush Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Trichostema lanatum	Woolly bluecurls	5	4
		Total pounds/acre	**40**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Artemisia californica	California sagebrush	1 gallon	5
Isomeris arborea	Bladderpod	1 gallon	6
Leymus condensatus	Giant wild rye	1 gallon	6
Malacothamnus fasciculatus	Chaparral mallow	1 gallon	5
Opuntia littoralis	Prickly-pear cactus	1 gallon	6
Ribes californicum	California gooseberry	1 gallon	5
Salvia leucophylla	Purple sage	1 gallon	6

Table 15
Cismontane Alkali Marsh Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Ambrosia psilostachya	Western ragweed	6	1.0
Atriplex canescens ssp. *canescens*	Four-wing saltbush	35	1.0
Distichlis spicata	Salt grass	70	4.0
Leymus triticoides	Alkali rye	80	1.0
Pluchea odorata	Marsh fleabane	15	0.5
		Total pounds/acre	7.5
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Anemopsis californica	Yerba mansa	1 gallon	3
Baccharis salicifolia	Mulefat	1 gallon	8
Distichlis spicata	Salt grass	liners	1
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	1 gallon	5
Juncus mexicana	Mexican rush	1 gallon	3
Malvella leprosa	Alkali mallow	1 gallon	3
Scirpus americanus	Winged three-square	1 gallon	3

Table 16
Southern Willow Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Application Rate (pounds/acre)*
Artemisia douglasiana	Mugwort	10	2
A. dracunculus	Tarragon	10	1
Elymus glaucus	Blue wildrye	85	2
E. fasciculatum	California 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
Verbena lasiostachys	Western verbena	50	1
		Total pounds/acre	**18**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Baccharis salicifolia	Mulefat	1 gallon	8
Leymus condensatus	Giant wild rye	1 gallon	6
Pluchea sericea	Arrow weed	1 gallon	8
Rhus trilobata	Skunkbrush	1 gallon	4
Ribes aureum	Golden currant	1 gallon	6
Salix exigua	Sandbar willow	1 gallon	10
S. laevigata	Red willow	1 gallon	12
S. lasiolepis	Arroyo willow	1 gallon	12
Sambucus mexicana	Mexican elderberry	1 gallon	12

Table 17
Herbaceous Wetlands Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Ambrosia psilostachya	Western ragweed	6	2
Distichlis spicata	Salt grass	70	3
Leymus triticoides	Alkali rye	80	2
Pluchea odorata	Marsh fleabane	15	1
		Total pounds/acre	**8**

Table 17
Herbaceous Wetlands Plant Palette

Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Anemopsis californica	Yerba mansa	1 gallon	3
Baccharis salicifolia	Mulefat	1 gallon	10
Juncus mexicana	Mexican rush	1 gallon	3
Pluchea sericea	Arrow weed	1 gallon	10
Salix exigua	Sandbar willow	1 gallon	10
Scirpus americanus	Winged three-square	1 gallon	3

Table 18
Alluvial Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/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 fasciculatum	California buckwheat	15	4
Gnaphalium californicum	California everlasting	2	1
Isocoma menziesii	Goldenbush	15	3
Lessingia glandulifera	Lessingia	80	1
Lupinus bicolor	Lindley's annual lupine	90	2
Phacelia cicutaria	NCN	80	2
		Total pounds/acre	**19**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Artemisia tridentata ssp. *tridentata*	Great basin sagebrush	1 gallon	6
Eriodictyon crassifolium var. *nigrescens*	Yerba santa	1 gallon	6
Eriogonum fasciculatum	California buckwheat	1 gallon	6
Yucca whipplei	Our Lord's candle	1 gallon	6

Table 19
Mexican Elderberry Scrub Plant Palette

Seed Mix			
Scientific Name	*Common Name*	*Minimum Percent Live Seed*	*Rate (pounds/acre)*
Amsinckia menziesii var. *menziesii*	Yellow fiddleneck	25	1.0
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
E. fasciculatum	California buckwheat	10	6.0
Lasthenia californica	Coast goldfields	50	0.5
L. condensatus	Giant wild rye	70	2.0
Mimulus aurantiacus	Bush monkeyflower	2	2.0
Nassella cernua	Nodding needlegrass	75	3.0
Nemophila menziesii	Baby blue-eyes	75	2.0
Phacelia cicutaria	caterpillar phacelia	80	1.0
Trichostema lanatum	Woolly bluecurls	40	2.0
		Total pounds/acre	**30.0**
Container Plants			
Scientific Name	*Common Name*	*Size*	*Spacing (feet on center)*
Juglans californica	Black walnut	1 gallon	20
Leymus condensatus	Giant rye grass	1 gallon	6
Marah macrocarpus	Wild cucumber	1 gallon	30
Prunus ilicifolia	Holly-leaf cherry	1 gallon	12
Quercus agrifolia	Coast live oak	1 gallon	20
Rhus trilobata	Squaw bush	1 gallon	6
Ribes californicum	California gooseberry	1 gallon	6
Rosa californica	California rose	1 gallon	6
Sambucus mexicana	Mexican elderberry	1 gallon	10

4.6.1 Container Planting

Plant materials used to implement the planting plan will generally include 1-gallon container stock, mulched material, and native seed as indicated in Tables 9–19. 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 designated on planting plans or 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 of the root ball entirely below grade. Some woody wetland species (e.g., willows) 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 these species will help ensure greater rooting strength and provide additional protection against seasonal scour and/or uprooting due to high flow velocities after winter storm events.

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 8.5.1** for more information on addressing herbivory problems.

4.6.2 Seed Application (Hydroseed and/or Drill Seeding)

Following container plant installation, mitigation areas will be stabilized with specified hydroseed mixes (Tables 9–19) and a light application of a soil binder, primarily for erosion 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 2,000 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 the 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.

4.7 Irrigation Plan

The primary goal of this Plan is to establish native vegetation communities capable of maintaining and supporting themselves in perpetuity. However, native container plants and seed may require irrigation for establishment on the mitigation site, especially during summer months. When an irrigation system is deemed appropriate and necessary, a temporary aboveground overhead spray irrigation system will be installed. 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 according to the construction documents and specifications associated with the project-specific mitigation plans. The irrigation systems will be designed with aboveground 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 3 years before the end of the 5-year maintenance period to demonstrate the self-sustainability of the established vegetation communities.

Irrigation design and layout will be provided with the final construction plans. The irrigation systems may utilize a series of solar- 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 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 systems 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.

4.8 Construction Drawings and As-Built Conditions

Following approval of this mitigation plan and subsequent site-specific mitigation plans, a final design will be prepared and integrated into construction drawings and specifications. Construction documents will incorporate the most current site condition information available. The plan package will include a site plan showing proposed work areas, 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.

Specifications shall define the scope of mitigation construction activities, the quality and type of materials to be used, permit requirements, specific performance-based standards of construction quality, and, when appropriate, specific required construction methodologies. Specifications shall be prepared in a recognized industry format such as Construction Standards Institute (CSI) format or Greenbook.

As-built plans for individual mitigation projects will be required only if the installation of the mitigation project substantially deviates from the approved site-specific mitigation plan and/or construction documents. If necessary, as-built plans will reflect changes to the configuration of vegetation community areas and site elevations that may affect project success. As-built plans will include field recordation of final mitigation site limits and geographic information system–based record mapping of mitigation sites down to the vegetation community level.

5.0 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 when weeds can easily outcompete native plants. The intensity of the maintenance activity is expected to subside each year as the native plant materials become more established and as local competition from non-native plants for resources in the mitigation areas is minimized through ongoing control.

5.1 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 5-year maintenance and monitoring period, concluding once success criteria have been met.

5.1.1 Weed Control

Ongoing weed control activities will occur within the mitigation areas throughout the 5-year maintenance period. All debris and slash generated from weed-removal activities will be disposed of off site in a legally acceptable manner. The goal of the weed control efforts will be to maintain the project with less than 5% cover of non-native plant species for the 5-year maintenance period.

Target weed species include all perennial exotic and weedy annual forb species listed on the Cal-Invasive Plant Council *California Invasive Plant Inventory* (Cal-IPC 2006, 2007). Specific focus will be on species that pose a risk to the development of the planned 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 5-year monitoring period, but complete eradication may not be possible due to the ubiquitous nature of their

distribution within the region. 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 adviser and applied by a licensed pest control applicator.

5.1.2 Trash Removal

Trash will be removed from the mitigation areas 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 microhabitats 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.

5.1.3 Irrigation Maintenance

Mitigation areas may 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 2 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 most likely be discontinued by the end of Year 2 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. As previously stated, if irrigation is deemed necessary beyond Year 2, adaptive management methods may be necessary to bring the project up to success criteria.

5.2 Responsible Parties

The responsible parties described in **Section 1.1** are also responsible for the performance of maintenance during the monitoring period.

5.3 Schedule

The maintenance schedule will commence once the mitigation construction is complete and accepted by the owner. Maintenance activities will be performed on a monthly basis for the first 120 days after installation. Thereafter, the frequency of maintenance activities may be decreased as appropriate to a minimum of quarterly, depending on factors such as native vegetation development, size and diversity of non-native populations, legacy weed seed bank, presence of trash, irrigation schedule, public access, etc. A detailed maintenance schedule will be prepared and presented in each site-specific mitigation plan to be included in each construction notification package.

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6.0 MONITORING PLAN FOR THE COMPENSATORY MITIGATION SITES

The purposes of monitoring of the mitigation sites are to: (1) 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) 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 or until success criteria are met.

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 monitoring during the 5-year maintenance and monitoring period. The project biologist will communicate and coordinate with the restoration contractor to ensure the timely performance of project activities. The project biologist shall submit progress reports to Newhall Land during installation and 5-year monitoring site visits, and annual reports to the Corps and the permittee each year on the anniversary date during the 5-year monitoring period. The mitigation project areas shall be accessible to Corps staff throughout project review and installation and during the 5-year maintenance and monitoring period.

6.1 Performance Standards and Success Criteria

The mitigation sites will be considered "complete" upon meeting all of the following success criteria. In a construction notification letter, the permittee may request modification of success criteria on a project-by-project basis. Acceptance of such requests will be at the discretion of the Corps.

- Regardless of the date of initial planting, any restoration site must have been without active manipulation by irrigation for a minimum of 3 years prior to CDFG and the Corps' consideration of successful completion.
- The percent cover and species richness of native vegetation shall be evaluated based on local reference sites for the plant communities in the impacted areas. Success criteria will be established at the time of a final mitigation plan for the specific mitigation site, and will generally follow the success criteria shown in Tables 20 and 21.
- Non-native species cover will be no more than 5% absolute cover.

Giant reed, tamarisk, perennial pepperweed (*Lepidium latifolium*), tree of heaven (*Ailanthus altissima*), pampas grass (*Cortaderia selloana),* and any species listed on the California State Agricultural list, or Cal-IPC list of noxious weeds will be controlled on the revegetation site as of the date of completion approval per Tables 20 and 21.

- Mitigation sites meet the criteria for Difficult Wetlands Situations in the Arid West; Chapter 5 of the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel08-28.pdf) to provide targeted jurisdictional mitigation acreage.
- Using the HARC assessment methodology described in **Subsection 2.1.1**, or other approved functional assessment methodology, the compensatory mitigation site shall meet or exceed the baseline functional scores (HARC AW-score units) of the impact area in jurisdictional waters of the United States. If the compensatory mitigation site(s) cannot meet or exceed the baseline functional score of the impact area(s) (HARC AW-score units) in jurisdictional waters of the United States, additional mitigation area may be required to compensate for the functional loss.
- The permittee shall mitigate all temporary construction impacts affecting waters of the United States, by restoring pre-project contours and revegetating temporary impact areas with appropriate native vegetation after completion of construction in the area, in accordance with the Mitigation Plan. At a minimum, the acreage and functions and services of the revegetation area shall equal or exceed the acreage and functions and services of the temporary impact areas. Functions and services for temporary impact and revegetation areas shall be compared annually using HARC-AW units and/or a similar Corps-approved method to assess functions and services as described in the Mitigation Plan.
- To demonstrate a minimum of 1:1 replacement of functions and services, permanent impact and compensatory mitigation areas shall be compared annually using HARC-AW (Hybrid Assessment of Riparian Condition- Area Weighted) units and/or a similar Corps-approved method to assess functions and services as described in the above Mitigation Plan.

Example performance criteria have been established for three planned vegetation communities: southern cottonwood–willow riparian, arrow weed scrub, and mulefat scrub. The criteria are based upon expected vegetative development within properly functioning native vegetation of the same type and are listed in Table 20. Depending on specific site conditions at the planned mitigation site, these performance criteria may be revised in final mitigation plans. Performance criteria for additional vegetation communities not shown here will be developed during the

preparation of site-specific mitigation plans and will be based on reference communities of the same type and occurring within similar conditions.

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 performance criteria will indicate that the 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 (establishment 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 vegetative cover within 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 planted tree species, and a minimum required native plant cover (Table 21).

Table 20
Performance Guidelines for Establishment 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.	8 ft.	10 ft.	12 ft.
Coast live oak	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.
Arroyo willow	4 ft.	6 ft.	8 ft.	10 ft.	12 ft.
Sandbar willow	2 ft.	3 ft.	4 ft.	5 ft.	6 ft.
Vegetative Cover					
Southern cottonwood–willow riparian	15%	30%	40%	60%	80%
Arrow weed scrub	10%	20%	35%	55%	75%
Mulefat scrub	10%	20%	25%	40%	50%
Southern coast live oak riparian forest	15%	25%	35%	50%	70%
Cismontane Alkali Marsh	—	—	—	—	100%
Perennial non-native/exotic cover[3]	5%	5%	5%	5%	5%

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 5% at any time within the 5-year maintenance period.

Table 21
Performance Guidelines for Revegetation and Enhancement 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]	8 ft[4]	10 ft[4]
Arroyo willow	—	4 ft[4]	6 ft[4]	8 ft[4]	10 ft[4]
Sandbar willow	—	2 ft[4]	3 ft[4]	4 ft[4]	5 ft[4]
Native Cover					
Southern cottonwood–willow riparian	15%	30%	45%	60%	80%
Arrow weed scrub	10%	20%	35%	55%	75%
Mulefat scrub	10%	20%	25%	40%	50%
Perennial non-native/exotic cover[3]	5%	5%	5%	5%	5%

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.
4 Only required if native cover does not reach target native cover at the end of Year 1 and if the project biologist recommends 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 expected 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.

6.2 Target Functions and Values

The functions and services of the mitigation sites will be evaluated using the HARC assessment methodology (Appendix B), or other approved functional assessment methodology. If the compensatory mitigation sites do not replace the aggregate lost functional HARC AW units of the impact areas, additional mitigation area may be required to compensate for the functional loss. The success of mitigation areas will be judged in part by the functional assessment scores that are achieved.

6.3 Target Hydrologic Regime

Target hydrologic regimes are intended to mimic the pre-construction hydrology conditions. Corps jurisdictional area will be defined by the 10-year storm event. Areas established with hydrophytic vegetation within these jurisdictional areas are considered to be wetlands in accordance with Difficult Wetlands Situations in the Arid West; Chapter 5 of the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). For each project, the site-specific mitigation plan will include a description of the anticipated post-project hydrology system characteristics and how the system will support the target riparian vegetation communities. Generally, the target regime for tributaries will be maintained through appropriate connections to headwater areas of the tributary drainages. Urban runoff will be controlled by water quality basins that will collect stormwater before discharge into the tributary drainage. The passage of stormwater through these basins will regulate the flow of runoff into tributary drainages, thereby more closely managing the peak flows. River hydrology will remain unchanged for mitigation sites along the main river channel.

6.4 Target Jurisdictional and Non-Jurisdictional Acreages to be Established, Restored, Enhanced, and/or Preserved

A variety of vegetation types and jurisdictional areas will be created, restored, enhanced, and preserved throughout the Project area at designated mitigation sites. On-site (i.e., in-place) mitigation is planned for temporary impacts.

6.5 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 monthly 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 photodocumentation stations will be established along each transect to record the progress of the mitigation sites and graphically record plant establishment over the 5-year period. In the annual report, the project biologist will provide a summary of results of the monitoring activities completed during the prior year.

6.5.1 Construction/Installation Monitoring

The project biologist will make regular site visits during key milestones associated with implementation of each mitigation project. 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 photodocumented and will be included in observation reports, as needed.

6.5.2 120-Day Plant Establishment Period and Monitoring

Upon successful completion of project installation as determined by the project biologist, the 5-year monitoring phase will begin. During the first 120 days of the 5-year 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.

6.5.3 Qualitative Monitoring

Data on native vegetation coverage, weed presence, and site progress will be collected during monitoring visits and 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/signage. All qualitative monitoring visits to the mitigation site will be documented with a monitoring report, which will be forwarded to Newhall Land and the restoration contractor. Any project deficiencies will be noted in the monitoring report, with accompanying recommendations for maintenance or remedial actions.

6.5.4 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 photodocumentation 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.

Quantitative monitoring (i.e., data collection from transect locations) shall utilize a consistent sampling methodology throughout the monitoring period to ensure accuracy in comparative analysis. Quantitative monitoring shall include conducting dead plant counts to determine survival of the container stock, assembling species lists of species establishing from seed and visually estimating native and exotic plant cover within the mitigation area. Transect monitoring will be utilized to measure percent native/non-native cover during Years 2 through 5. The Habitat Restoration Specialist/Monitor shall determine transect locations, using a stratified-random sampling method. One transect shall be established in a reference site in proximity to the mitigation area to collect data to be used for comparison against the mitigation effort.

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 be recorded. Vertical strata include the herbaceous layer (0.0 to 1.0 meter), shrub layer (1.0 to 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. The project biologist will determine the appropriate number of transects to be installed on a site-by-site basis, but there shall be at least one transect per vegetation community type and at least one transect per every 3 acres. Transects will be 50 meters long, or the maximum length possible in areas with less than 50 linear meters available.

6.6 Monitoring Schedule

Monitoring will be performed throughout the 5-year maintenance and monitoring period as defined in each site-specific mitigation plan to be prepared and included in construction notification packages. In general, qualitative monitoring will be conducted on a quarterly basis during the initial years of mitigation establishment followed by quarterly monitoring in subsequent years until performance criteria are reached. Quantitative monitoring activities will

be performed annually in the fall at the end of the growing season to collect vegetation data for analysis and inclusion in the annual monitoring report.

6.7 Annual Monitoring Reports

An annual monitoring report will be submitted to the permitting agencies during the 5-year maintenance and monitoring period for each individual mitigation project. The monitoring reports will describe the existing conditions of the mitigation areas based on a HARC functional assessment based on functions and services metrics (Appendix B), routine site observations, and quantitative vegetation data collection. The reports will provide a comparison of annual success criteria with field conditions; calculate HARC AW units present at the conclusion of the monitoring year; identify all shortcomings of the project and project implementation; and recommend remedial measures necessary for the successful completion of the mitigation project. Each yearly report will provide a trend 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 2 through 5 of the mitigation project.
- HARC metric scores (work sheet) and overall HARC score

The annual monitoring reports will be submitted to the resource agencies by April 1 of each year with the Annual Mitigation Status Report, and will report on mitigation status from the prior growing season (through fall of the prior year). The Annual Mitigation Status Report is required for projects installed under the Newhall Ranch Specific Plan, Mitigation Measure SP-4.6-9 (County of Los Angeles 2003).

7.0 COMPLETION OF COMPENSATORY MITIGATION

Two levels of mitigation completion will occur during RMDP implementation: 1) Individual mitigation site completion and final project-wide completion of compensatory mitigation.

Individual mitigation site completion will be based on success criteria and the establishment of jurisdictional acreage per **Section 7.1**. Upon submitting the annual report for the final year of each individual mitigation project, Newhall Land will notify the Corps of the degree to which final success criteria have been met and will request acceptance of the site, as appropriate. Completion of mitigation at individual sites will be supported by appropriate quantitative measures as described in **Section 7.1**. Following receipt of the notification of completion, the Corps may visit the site to confirm the completion of the mitigation effort and may issue formal letters of success upon acceptance. Removal of the irrigation system, if any, temporary fencing, and signage would occur prior to final sign-off.

Early release of individual mitigation sites may be possible if performance standards and success criteria are met early and the resource agencies agree with the level of establishment. Acceptance of the site would then be provided to CDFG as needed in support of the release of any financial security posted for the project (e.g., letter of credit, bond, etc.), and confirmation that project mitigation has been satisfied.

In the event that Newhall Land gets no response from the permitting agencies within 60 days of submittal of the final report, the final monitoring report will be deemed approved. Newhall Land will formally notify the permitting agencies that the mitigation site has satisfied the agency permits and that no further maintenance or monitoring will be conducted (excepting that required by long term management pursuant to **Section 9.0** and the RMDP), and Newhall Land may request immediate release of any financial securities held by any permitting agency for the project.

Project-wide completion of mitigation will involve an accounting of aggregate jurisdictional acreage and HARC AW units established throughout all mitigation sites as described in **Section 7.2**.

7.1 Completion of Compensatory Mitigation Sites

At the conclusion of the scheduled maintenance and monitoring period for each mitigation site, the mitigation site must meet the following standards to be considered complete:

- A Corps jurisdictional delineation will be conducted pursuant to Difficult Wetlands Situations in the Arid West; Chapter 5 of the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) to verify that

the mitigation site has established or restored the minimum jurisdictional acreage shown in Table 7 and as required by site specific mitigation plan. Documentation of the appropriate jurisdictional acreage pursuant to Section 6.1 and the site specific mitigation plan will demonstrate the mitigation site's contribution to the aggregate mitigation acreage needed to provide full, project-wide compensatory mitigation (Section 7.2).

- Attainment of vegetation performance standards as generally described in Section 6.1 and more specifically in the site specific mitigation plan.

HARC AW units will be calculated for completed mitigation sites using the HARC functional assessment methodology (Appendix B) to determine the contribution of the mitigation site to project-wide mitigation. However, HARC AW units will not be used to determine individual site completion.

7.2 Completion of RMDP Compensatory Mitigation

Once project-wide mitigation has been determined to be successful based on the following analysis, a final mitigation report will be prepared and submitted to the Corps. The final mitigation report will describe the two mitigation components that are required to demonstrate that RMDP compensatory mitigation has been accomplished:

- The aggregate established and restored jurisdictional acreage of all completed and signed-off mitigation sites will be compared against the required compensatory mitigation acreage. This established and restored jurisdictional acreage must be equal to or exceed the required jurisdictional acreage as defined in the Corps Permit for compensatory mitigation to be complete, and;
- Based on completed mitigation site HARC evaluations (Section 7.1), an accounting will be made of all mitigation sites to determine the aggregate number of HARC AW units achieved by all compensatory mitigation sites. The aggregate number of HARC AW units for all mitigation sites must be equal to or exceed the aggregate HARC AW units lost at permanent and temporary impact locations for the RMDP compensatory mitigation to be deemed complete on a functions and services basis.

If the jurisdictional acreage and HARC AW units meet or exceed impacted acreage and units, then RMDP mitigation will be considered to be complete. If the compensatory mitigation sites do not fully replace the aggregate jurisdictional acreage and/or lost functional HARC AW units, additional mitigation area may be required to compensate for the respective mitigation shortfall.

In this aggregate functional analysis, mitigation sites with a higher quantity of completed HARC units than anticipated in the site specific mitigation plan may offset mitigation sites that may have a lower quantity of HARC score than anticipated. Thus, if the overall balance of completed HARC units for the mitigation sites, in the aggregate, meets or exceeds the HARC units impacted, then the RMDP mitigation will be considered to have fully compensated for RMDP impacts.

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8.0 CONTINGENCY MEASURES

If the mitigation site does not meet the success criteria as defined in site specific mitigation plan, generally described in **Section 6.1**, and as required by **Section 7.0**, then contingency measures will be implemented. The contingency measures may include remedial work to increase the functions and values of the mitigation site and/or the addition of mitigation land to compensate for the lost functions and services.

In accordance with Mitigation Measure BIO-7, if at any time prior to resource agency approval of the mitigation area, the site is subject to a force majeure event (flood, fires, or drought), the permittee shall be responsible for replanting the damaged area, except in the case of fire, natural recruitment may be allowed depending on the extent of the fire damage and whether any fire lines permanently damaged mitigation site vegetation or channel geometry. The site will be subject to the same success criteria as provided for in Mitigation Measure BIO-6. Should a second force majeure event occur prior to Agency approval of the restoration area, the permittee shall coordinate with the Agencies and develop an alternative restoration strategy(ies) to meet success requirements. This may include mitigation elsewhere in the Santa Clara River corridor or tributaries.

8.1 Initiating Procedures

If performance criteria are not met for all or any portion of the mitigation projects 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 sites have not met the performance criteria by the end of the 5-year 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.

8.2 Alternative Locations for Contingency Compensatory Mitigation

If a deficiency of Corps-jurisdictional acreage or functions and values is determined based on the analysis described in **Section 7.0**, then additional mitigation site options will be presented to the Corps and a plan for contingency measures will be negotiated.

8.3 Funding Mechanism for Long-Term Management

In perpetuity, land stewardship activities on mitigation lands will be funded through a non-wasting endowment held by an agency-approved land management entity in accordance with Corps Special Condition XX.

8.4 Responsible Parties

Newhall Land, its successors, or its assignees are responsible for all contingency efforts that are required to complete compensatory mitigation for each development phase of the RMDP.

8.5 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 Plan, 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 areas. Adaptive management will include the utilization of regular qualitative assessments and rapid quantitative 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 sites. Following an event that causes damage to all or part of a 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 sites.

8.5.1 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 sites, 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.

8.5.2 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 establishment/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.

8.5.3 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 occur, including low seasonal rainfall and prolonged high temperatures that may negatively affect the mitigation sites (e.g., cause lower native cover, higher plant mortality, or increased potential for pest infestations on site). Planned irrigation will reduce or eliminate the effects of drought on container plants and seedlings during the first 2 years of the mitigation projects. 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/are required at a later project date. If the irrigation systems are required at a later date, irrigation should be used only as necessary (i.e., periodic watering versus regular daily watering).

8.5.4 Wildfire/Geologic Events

In the event that a mitigation site or a portion of a mitigation site burns in a wildfire or suffers from mass movements (e.g., landslides, slope sloughing, or other geologic events), the restoration biologist and/or Newhall Land shall promptly review the site and determine what action, if any, should be taken. The primary anticipated post-fire management activity involves monitoring the site and controlling annual weeds that may invade burned areas following a fire

event, especially when such weeds were not previously present or were present in lower densities. If fire control lines or other forms of bulldozer damage occur in the mitigation sites, these areas would be repaired and revegetated to pre-burn conditions or better.

In general, a burned site will be left to recover naturally from wildfire or geologic events. The native habitat types within the preserve are well adapted to recover from wildfires unless the fire frequency is artificially increased. Therefore, burned areas should 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. 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 for the habitat to properly recover and regenerate.

The preferred erosion control devices to be used, if necessary, include fabric silt fencing, gravel or sand bags (made of biodegradable burlap), straw wattles certified as weed-free (not just free of "U.S. Department of Agriculture noxious weeds," but free of all weeds), and judicious seeding with locally indigenous native species free of weed seed.

The same passive, successional regeneration holds true for mass-movement, landslide, or slope-sloughing types of events. Some plant species have evolved and/or adapted to recruit into these types of geologically disturbed areas.

9.0 LONG-TERM MANAGEMENT PLAN

After completion of the performance-based mitigation requirements during the 5-year maintenance and monitoring program, management of the mitigation areas will transition to long-term management. Long-term management will be conducted in accordance with the RMDP (December, 2010).

9.1 Management and Maintenance Responsibilities

Following successful completion of the mitigation project(s), the jurisdictional areas will be managed by an environmental land management entity/organization (Land Manager), such as CNLM, or an approved alternative, as agreed to by Newhall Land and the appropriate resource agencies.

9.1.1 Management Actions

Management actions shall be performed at the direction of the Land Manager. Management actions shall include invasive species control, removing accumulated trash and repairing broken or damaged fences, gates, locks, signage, and other open space-related items as may be deemed necessary by the Land Manager.

9.1.2 Long-Term Monitoring

The long-term monitoring methodology for the jurisdictional areas will focus on the persistence of appropriate functions and values provided by the mitigation program by conducting regular qualitative monitoring visits. Specifically, the items addressed during monitoring visits shall include an evaluation of natural recruitment, 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/signage.

9.1.3 Reporting

Annual management reports shall be prepared documenting the status of the open space areas including jurisdictional areas in accordance with the RMDP. Long-term management and reporting may be phased. The annual report will be comprehensive in addressing all the managed areas by each Land Manager. The annual report will contain a description of the management actions, monitoring, and adaptive management activities conducted in each of the management areas during the calendar year.

9.2 Conservation Mechanism

Provisions for conservation, public access, and long-term resource stewardship were incorporated as part of the Newhall Ranch Specific Plan approvals granted by Los Angeles County (County) in 2003, and Resource Management and Development Plan approvals by the California Department of Fish and Game (CDFG) in 2010. In accordance with Corps Permit Special Condition XX, conservation easements or deed restrictions will be recorded over the mitigation sites for impacts to Corps-jurisdiction as shown in Table 22.

Table 22
LEDPA Conservation Land Dedication/Recordation Schedule

Open Space Area	Conservation Instrument	Fee Ownership	Schedule/Phase of Development
High Country SMA			
High Country (Part 1)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 2,000th Residential Building Permit
High Country (Part 2)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 6,000th Residential Building Permit
High Country (Part 3)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 11,000th Residential Building Permit
Salt Creek – Ventura County			
Salt Creek Watershed w/in Ventura County	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	Upon Approval of Potrero Canyon TTM
Santa Clara River			
Santa Clara River (LMV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development – Castaic Creek Confluence Area
Santa Clara River (LMV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development – Long Canyon Bridge Area
Santa Clara River (LMV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development – Castaic Creek at SR126 Area
Santa Clara River (MV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development – SJ Flats to Lion Canyon
Santa Clara River (MV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development – Middle Canyon Spring Area

Table 22
LEDPA Conservation Land Dedication/Recordation Schedule

Open Space Area	Conservation Instrument	Fee Ownership	Schedule/Phase of Development
Santa Clara River (MV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development – Commerce Center Bridge Area
Santa Clara River (UC Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction between Chiquito and San Martinez Grande drainages
Santa Clara River (UC Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction west of San Martinez Grande
Santa Clara River (WRP)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Newhall Ranch Wastewater Reclamation Plant (WRP) construction
Santa Clara River (HS)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Homestead Village South TTM Development
Santa Clara River (Pot)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development
Tributary Drainages			
Mission Village Preserved and Lion Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development
Homestead Village South Preserved and Long Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead South Village TTM Development
Homestead Village North Preserved, Chiquito, San Martinez Grande Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead North Village TTM Development
Potrero Canyon Drainage and CAM Mitigation Site	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development

The Conservation Areas will be subject to easements and rights of way of record and will reserve all rights not needed for conservation purposes and will allow any activities that are needed for the development of the Specific Plan. The Conservation Easement will reserve all water and

water rights, excluding water necessary to support existing aquatic resources. Further, the Conservation Easement will reserve all oil, oil rights, minerals, mineral rights, natural gas rights and other hydrocarbons by whatsoever name known, geothermal steam and all products derived from any of the foregoing, that may be within or under the Conservation Area, together with the perpetual right of drilling, mining, exploring and operating therefor and storing in and removing the same from the Conservation Area or any other property, without, however, the right to drill, mine, store, explore or operate through the surface of the Conservation Area or the upper 500 feet of the subsurface of the Property for such substances.

Should any active well locations continue to operate during and/or after development, then the related acreage will be excluded from the conservation instruments. New or additional surface entry for oil and gas exploration or extraction will be restricted from all of the proposed Corps mitigation conservation areas.

The following Conservation Mechanism information will be included with each Construction Notification that identifies Corps mitigation within the conservation area:

- Draft Conservation Easement or Conservation Covenant for each specific conservation area
- Property Analysis Record (PAR) for funding of long-term management of the conservation area

Property Assessment and Warranty documentation to identify encumbrances associated with the conservation area.

10.0 REFERENCES

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APPENDIX A

Vascular Plant Species Observed within the Newhall Ranch Specific Plan Area (2002–2006)

APPENDIX A
Vascular Plant Species Observed within the Newhall Ranch Specific Plan Area (2002–2006)

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 sp. nova – undescribed 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 wreath plant
Stephanomeria pauciflora – wire-lettuce
Stephanomeria virgata – twiggy wreath plant
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 × *Q. 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 selloana* – 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 sacation
* *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

APPENDIX B

Hybrid Assessment of Riparian Condition (HARC) Methodology

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Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

Buffer Metrics (CRAM and LLFA)	
1. *(office, verify in field)* Average Width of Buffer	
> 100 m	1.0
60 - 100 m	0.75
30 - 60 m	0.50
<30 m	0.10
None	0.0
2. *(office, verify in field)* Buffer Condition	
Area is characterized by natural, undisturbed upland with native vegetation and lack of invasive plants, lack of substrate disturbance, and lack of trash.	1.0
Buffer appears to have been moderately disturbed and may be characterized by presence of invasive plants, etc., (minor to moderate amounts of trash or debris visible); abandoned field; shrubland or buffer recently burned, but recoverable; dirt road crossing; or mowed, non-native ruderal.	0.75
Disced ruderal; dry-land farming; active agriculture.	0.50
Dirt road, not recoverable; residential; pastureland; landscaped park.	0.25
Buffer is highly disturbed, barren ground visible with highly compacted soils, moderate to high amounts of trash and other large debris; urban or industrial.	0.10
No buffer present.	0.0
3. *(office, includes sub-watershed outside AA)* Land Use/Land Cover	
<5% of watershed/landscape with LULC types that increase N/P/H/S.	1.0
>5 and <15% of watershed/landscape with LULC types that increase N/P/H/S; or recently burned open space.	0.75
>15 and <30% of watershed/landscape with LULC types that increase N/P/H/S.	0.50
>30 and <50% of watershed/landscape with LULC types that N/P/H/S.	0.25
>50% of watershed/landscape with LULC types that increase N/P/H/S.	0.10
Hydrology Metrics (CRAM, LLFA, HGM)	
4. *(office, includes sub-watershed outside AA)* Water Source	
Water source derived from precipitation, groundwater and/or natural overland or tributary flow from catchments. No indications of artificial water sources.	1.0
Source of water is primarily natural; however, may receive occasional or small amounts of inflow from anthropogenic sources, such as urban runoff, seepage, agriculture or POTW discharge. Natural flow regime.	0.75
Source of water is primarily anthropogenic, and receives inflow from anthropogenic sources, such as urban runoff, seepage, agriculture or POTW discharge. Non-natural flow regime.	0.50
Primarily supported by direct irrigation, pumped water, artificially impounded water, or other artificial hydrology; may be perennial flow; channel incision present.	0.25
No natural or non-natural flows occur at the present time.	0.0

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

5. *(office, verify in field)* Hydroperiod	
Subject to natural peak flows and base flow.	1.0
Peak flow relatively natural, but base flows altered either by augmentation or reduction; or Reach has recently burned, but is recoverable; temporary peak flows are anticipated.	0.75
Peak flows altered by upstream activities (augmentation or reduction), but base flows are relatively natural.	0.50
Assessment area is subject to alteration of both peak flow and base flow. Recoverable.	0.25
Assessment area is subject to alteration of both peak flow and base flow. Not recoverable.	0.10
6. *(field)* Floodplain Connection	
Adjacent to an unrestricted floodplain that is comprised of natural or open space lands or agricultural lands.	1.0
In most years, storm flows or storm surges can escape the active channel and access adjacent benches, riparian areas, or the marsh plain. However, unnatural levees, berms or adjacent land uses restricts the extent of overbank inundation; or naturally confined channel.	0.75
Moderate channel constriction, incision, bank armoring agricultural constraint, or adjacent road precludes water from accessing adjacent benches, riparian areas or the marsh plain, except in very high flows; however, access is still possible.	0.50
All overbank flow beyond the bankfull channel is contained within a defined conveyance or channel and cannot access adjacent riparian areas, benches or marsh plain.	0.25
Channel is channelized and contains concrete or rip-rap slopes/bottom.	0.0
7. *(field)* Surface Water Persistence and Recharge	
Evidence of surface water ponding/storage on floodplain for greater than one day (intermittent). Substrate porosity is such that runoff persists; floodplain has complex microtopographic relief; or perennially flowing/saturated; or adjacent wetlands.	1.0
Evidence of surface water ponding/storage on floodplain for greater than one day (intermittent). Floodplain has simple microtopographic relief. (Non-wetland floodplain).	0.75
Evidence of surface water ponding/storage for less than one day (ephemeral).	0.50
Assessment area provides no features for ponding/storing water. Variable is recoverable and sustainable through natural processes.	0.25
Assessment area provides no features for ponding/storing water. Variable is not recoverable and sustainable through natural processes under current conditions.	0.0
8. *(field)* Floodprone Area	
Floodprone area not modified by cultural processes. FPA > 2.0x bankfull width.	1.0
Floodprone area confined by artificial structure(s) or culturally accelerated channel incision is minimal; FPA > 2.0x bankfull width; disturbance affects one side of drainage; or naturally v-shaped channels for small drainages.	0.75
Floodprone area is artificially confined or culturally accelerated channel incision is present; FPA > 1.5x bankfull width; disturbance affects one side of drainage.	0.50
Floodprone area is artificially confined or culturally accelerated channel incision is present; FPA < 1.5x bankfull width; disturbance affects both sides of drainage; variable is recoverable through natural processes under current conditions.	0.25
Floodprone area is artificially confined or culturally accelerated channel incision is present; FPA < 1.5x bankfull width; disturbance affects both sides of drainage Variable is not recoverable through	0.10

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

natural processes under current conditions.	
Floodprone area is completely modified by concrete and/or rip-rap; disturbance affects both sides of drainage; variable is not recoverable through natural processes under current conditions.	0.0

Habitat Metrics – Physical Structure Metrics (CRAM, LLFA, HGM)

9. *(field)* Topographic Complexity	
Assessment area is dominated by a complex arrangement of micro and macro topographic features, such as meanders, bars, benches, secondary channels, backwaters, roots, pits, and ponds. Higher gradient systems may contain plunge-pool sequences.	1.0
Some macrotopographic features present, such as secondary channels; however, the complexity and interspersion of such features has been reduced by substrate alteration, flooding, grazing, trampling, or placement of fill material; or naturally v-shaped channel is a small drainage.	0.75
Assessment area consists of a single channel without macrotopographic features such as benches or secondary channels; however, the channel has microtopographic features such as bars, braiding, and presence of woody debris.	0.50
Assessment area consists of a single channel without macrotopographic features such as benches or secondary channels; however, the channel has microtopographic features such as bars, braiding, and presence of woody debris. Features may be the result of anthropogenic disturbance.	0.25
Assessment area consists of a uniform, straight channel with no substantive topographic features.	0.10
10. *(field)* Substrate Condition	
Soils in the assessment area or adjacent to the active channel are relatively intact, show evidence of surface organic matter accumulation, fallen trees, branches, and twigs or other course woody debris, decayed leaf litter, and a fine detritus of organic matter. Redoximorphic features may be visible within 30 cm of the surface; organic or clay layers may be present within the soil column (top 30cm).	1.0
Channel and adjacent benches are dominated by unconsolidated sand or other poorly formed native soils and/or bedrock outcrops. Substrate may exhibit moderate embeddedness or compaction; lack of organic layers in column; cattle may have had minor to moderate effects on sandy substrates.	0.75
Soils may exhibit some evidence of sparse organic litter or coarse woody debris. However, the assessment areas is mainly characterized by disturbed conditions, such as substantial filling, compaction, tilling, grazing, or similar activity, but appear recoverable with minimal intervention.	0.50
Soils are extremely compacted, dominated by imported fill or other predominantly upland (non-native) soils or have been deeply ripped, disced, or drained.	0.25
Channel is lined with concrete or rip-rap.	0.0

Habitat Metrics – Biotic Structure Metrics (CRAM, LLFA, HGM)

11. *(field)* Vertical Biotic Structure	
Most of the Assessment Area supports 3 height classes of vegetation; T/S/H; may also include vine layer.	1.0
About half of the Assessment Area supports 3 vegetative strata and/or most is covered by at least 2 height classes.	0.75
Between one quarter and half of the assessment areas supports 3 vegetative height classes and/or at least half of the site support 2 height classes.	0.50

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

Less than one quarter of the Assessment Area supports 3 height classes OR less than one-half supports 2 or more height classes OR only one height class is present.	0.25
12. *(field)* Interspersion and Zonation	
2 or more plant zones exist along most of the active channel or shoreline, plus various tributary channels, meander scars, paleo-channels, or other features, producing a complex mosaic of vegetation in overhead view (zones can include submerged or emergent vegetation).	1.0
2 or more plant zones exist along about half of the main active channel or shoreline, and along a few of the tributary channels and other topographic features.	0.75
2 or more plant zones are apparent along about one quarter to half of the main active channel or shoreline.	0.50
2 or more plant zones are apparent along less than one quarter of the active channel.; OR sparse shrubs occur in confined/ incised channel.	0.25
Unvegetated channel.	0.10
13. *(field)* Ratio of Native to Non-Native Plants	
75 – 100% of the plant species are native and no stratum is dominated by non-native species.	1.0
50 - < 75% of species are native and/or up to 25% of the strata present are dominated by non-native species.	0.75
25 - < 50% of species are native and/or up to 25% of the strata present are dominated by non-native species.	0.50
10 – < 25 %of species are native and/or up to 50% of the strata present are dominated by non-native species.	0.25
0 - < 10 % of species are native and/or up to 100% of the strata present are dominated by non-native species.	0.10
No vegetation present. Variable is not recoverable and sustainable through natural processes under current conditions.	0.0
14. *(field, includes sub-watershed area outside of AA)* Riparian Vegetation Condition	
Vegetation represents reference condition with no chronic disturbance or recovered from historical disturbance. Presence of areas disturbed through natural processes (i.e., fire and flood) do not detract from score.	1.0
Native vegetation recovering with minor chronic disturbance (i.e., grazing). Presence of areas disturbed through natural processes (i.e., fire and flood) do not detract from score. Invasive, exotic species may be present.	0.75
Native vegetation common and widespread with moderate grazing pressure. Presence of areas disturbed through natural processes (i.e., fire and flood) do not detract from score. Invasive, exotic species may be present.	0.50
Native vegetation localized with heavy grazing pressure. Presence of areas disturbed through natural processes (i.e., fire and flood) do not detract from score.	0.25
Native vegetation absent, area hardened (i.e., paved, urban, etc.) or graded. Restoration impractical and unlikely for economic or political reasons.	0.0
15. *(office, verify in field, includes sub-watershed area outside of AA)* Riparian Corridor Continuity	
<5% of riparian reach with gaps/breaks due to cultural alteration.	1.0
>5 and <15% of riparian reach with gaps/breaks due to cultural alteration.	0.75
>15 and <30% of riparian reach with gaps/breaks due to cultural alteration.	0.50
>30 and <50% of riparian reach with gaps/breaks due to cultural alteration.	0.25
>50% of riparian reach with gaps/breaks due to cultural alteration.	0.10

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

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Newhall Hybrid Functional Assessment Datasheet Notes - Riverine Wetlands Class

Step 1. Establish reaches and Assessment Areas (AAs) on aerial imagery. Use table below to help delineate AAs.
Step 2. Complete and initial score for functions 1,2,3,4,5,6,8, and 20 on each AA in the office. Use the notes for these functions below. These initial scores will be verified and updated as required during the field visit.
Step 3. Conduct the field visit and score all functions in each AA. Use the notes for all functions below. Note that there are two broad sets of functions – those that are evaluated and scored inside the established AA only, and those that require you to assess function conditions within the AA as well as along the majority of the selected reach in which the AA occurs to arrive at a function score. For this reason, look at as much of the reach as time permits. Functions 4,5,8,11,18,19,20 and 21 require an evaluation outside of the AA boundaries, and may be the last ones you score in a reach.

FEATURES USED TO DELINEATE RIVERINE AAs
• grade or water height control structures • weirs and other flow control structures • lotic-lentic transitions • natural falls • culverts • inlets and outlets (end-of-pipe discharges) • diversion ditches (brow ditches) • channel confluences • dams, levees, and banked road grades • uplands (*i.e.,* terrestrial breaks in floodplains, shorelines, riparian habitats) • open water areas broader than the wetlands (*i.e.,* wetlands on opposite shores of a large river) • major changes in degree of channel confinement, degradation, aggradation, slope, or bed form
FEATURES NOT USED TO DELINEATE RIVERINE AAs
• unpaved, unimproved single-lane roads • at-grade roads or Arizona crossings • bike paths and jogging trails at grade • equestrian trails • fences (unless designed to obstruct the movement of wildlife) • bare ground on the active floodplain or below the ordinary high water line • riffle – glide – pool transitions within a homogeneous reach of these features • spatial changes in land cover or land use along the wetlands border • property boundaries • state and federal jurisdictional boundaries
Source: CRAM Version 3.0.

1. Divide the perimeter of the AA into four sections, estimate the width of the buffer in each of the four sections up to 100m per side and calculate the mean buffer width.

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

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2. Assess vegetative cover, substrate condition, and indicators of disturbance. If buffer sides vary in condition, score each side and calculate mean buffer condition score.
3. Assess the percentage of the drainage basin with land use/land cover types having the potential to increase the nutrient, pesticide, hydrocarbon, or sediment loading in downstream surface waters upland areas adjacent to and upstream from the reach being assessed (stressors - secondary or tertiary treated water inputs, oil production platforms, agricultural fields, paved roads, *etc*.).
4. Assess the primary origin of water input to the assessment reach and the degree to which water input has been affected or is controlled by adjacent land use activities including upstream activities (stressors - septic tanks, outfalls, urban and agricultural runoff, *etc*.)
5. Assess evidence of diversions, flow augmentations, or upstream constrictions. Dams and other upstream impoundments impact the hydroperiod if they control more than 25% of the upstream drainage area of the AA or if they are close enough to the AA to substantially affect the magnitude or timing of inflows. Diversions affect hydroperiod if they routinely reduce either base flow or storm flow to the assessment reach by more than 15%. Constrictions of the active channel within 1 km (upstream) of the AA also alter hydroperiod.
6. Assess degree of channel incision and look for evidence of extent and vigor of inundation of banks or terraces and overbank flow including wrack, debris, fine sediment deposits, and evidence of ponding on benches/terraces adjacent to the stream channel. Consider channel depth, presence of natural or man-made levees, and stream bank condition.
7. Assess the potential for surface water storage including the adjacent floodplain (note presence/absence of any hydrophytic vegetation). Perennial streams and wetlands will generally score higher than ephemeral/intermittent streams unless significant modifications to stream features have occurred.
8. Assesses the extent to which the lateral spread of flood flows are impeded by channel and buffer modifications (stressors – excessive channel incision, concrete channels, , development of floodplain, berms, walls, cisterns,
9. Count the number of micro-topographic features that affect stream elevation or influence the path of water flowing along a transect line through the AA (hummocks, pools, debris jams, multiple incised channels of various depths, sediment bars, micro-terraces, *etc.*) Lower order riverine wetlands and ephemeral channels have less topographic complexity and subtle indicators including large rocks, middens, or accumulations of woody debris. Trampling, filling, burying or other alterations of topographic features indicate a degraded condition.
10. Assess the presence or absence of intact, unaltered soil that is regularly saturated/inundated and has an accumulation of organic matter or coarse litter. Look for sub-surface redoximorphic features (top 30 cm of substrate), ponding, or organic matter accumulation, and observe any pits, ponds, backwaters and the floodplain within the AA (good condition indicators - leaf litter accumulation, coarse woody debris, dried algal mats, algal coating on sand grains in the channel bed, organic streaking in the soil horizon, etc.). Excessive sediment deposition, filling, down cutting, trampling, or compaction will reduce the score.
11. Count the number of vegetation height classes within the AA (canopy = >3m, shrub = 3m to 1m, herb = >1m).

Date _____ Newhall Site_____

Stream Reach Number_____

Surveyor Initials _____ Assessment Area (AA) Number_____

-

12. Assess the horizontal structure of the AA by counting the number of different kinds of plant patches (minimum patch size is generally 3m by 3m) including all standing vegetation. These patches correspond to the Keeler-Wolfe plant series mapped for the area and/or general biotic patch types (*e.g.*, grasses, forbs, shrubs, vines, short and tall deciduous trees, short and tall evergreen trees, short and tall sedges/rushes, emergent macrophyte beds, floating macrophytes). Each patch should signify a different elevation or distance away from the usual high water mark or contour and the transition from the wetlands to the adjacent uplands is the primary evaluation zone in dry systems. Plant zones may be discontinuous and can consist of more than one plant species, but some zones may be mono-specific. In most cases, one plant species dominates each zone. Evaluate the number of zones present and the degree of interspersion among these zones (from a hypothetical plan view).

13. Briefly collect vegetation data in a 10 m X 50 m plot within the AA. Make separate lists of native and non-native herbs, shrubs and trees within the plot and use the ACOE 50/20 rule to determine dominant vegetation in each stratum if necessary. This data will also be used for steps 17 and 21.

14. Observe the general condition of the riparian corridor (floodprone area) in the reach (stressors – undercutting, grazing, grading, herbicidal control, insect infestations, *etc*.).

15. Estimate the percent of flood prone area along the main stem channel of the riparian reach occupied by native and non-native vegetation communities with adequate height and structure to allow faunal movement (*i.e*., annual grassland with no shrub or tree component represents a corridor gap).

APPENDIX C

RMDP Functions and Services Compensatory Mitigation Tables

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Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
Chiquito Canyon	Waters Avoided	4.15	0.65	2.69
	Temporary Impact	3.36	0.65	2.18
	Permanent Impact	4.7	0.65	3.04
	Total HARC AW Unit Impacted	***12.21***	**---**	***7.90***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	4.15	0.60	2.49
	Temporary Impact Areas	3.36	0.60	2.02
	Mitigation Establishment	9.80	0.60	5.88
	Total HARC AW Units Provided at Chiquito Canyon	**17.31**	**---**	**10.39**
	At completion of Mitigation, does the Chiquito Canyon Drainage provide Functions and Services equivalent or greater than Pre-Project?			**+ 2.48 , YES, excess AW Units**
Jurisdiction Name	**Description**	**Waters of the U.S. (including wetlands)**	**HARC TotalScore**	**Impact to HARC AW Units**
Lion Canyon	Waters Avoided	0	0.80	0.00
	Temporary Impact	2.17	0.80	1.73
	Permanent Impact	4.69	0.80	3.75
	Total HARC AW Unit Impacted	***6.86***	**---**	***5.48***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	0.00	0.60	0.00
	Temporary Impact Areas	2.17	0.60	1.30
	Mitigation Establishment	2.10	0.60	1.26
	Total HARC AW Units Provided at Lion Canyon	**4.27**	**---**	**2.56**
	At completion of Mitigation, does the Lion Canyon Drainage provide Functions and Services equivalent or greater than Pre-Project?			**-2.92 ,NO, AW Unit Deficit**
	PROPOSED HARC DEFICIT MITIGATION SITE:		**Santa Clara River****	**2.92**

Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
Long Canyon	Waters Avoided	0.45	0.63	0.28
	Temporary Impact	0.01	0.63	0.01
	Permanent Impact	5.24	0.63	3.29
	Total HARC AW Unit Impacted	***5.7***	**---**	***3.58***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	0.45	0.60	0.27
	Temporary Impact Areas	0.01	0.60	0.01
	Mitigation Establishment	23.40	0.60	14.04
	Total HARC AW Units Provided at Long Canyon	**23.86**	**---**	**14.32**
	At completion of Mitigation, does the Long Canyon Drainage provide Functions and Services equivalent or greater than Pre-Project?			**+10.74 , YES, excess AW Units**

Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
Potrero Canyon	Waters Avoided	31.01	0.76	23.50
	Temporary Impact	5.66	0.76	4.29
	Permanent Impact	2.05	0.76	1.55
	Total HARC AW Unit Impacted	***38.72***	**---**	***29.34***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	31.01	0.70	21.71
	Temporary Impact Areas	5.66	0.70	3.96
	Potrero CAM Mitigation Establishment	19.00	0.80	15.20
	Potrero Drainage Mitigation Establishment	14.00	0.70	9.80
	Total HARC AW Units Provided at Potrero Canyon	**69.67**	**---**	**50.67**
	At completion of Mitigation, does the Potrero Canyon Drainage provide Functions and Services equivalent or greater than Pre-Project?			**+21.33 , YES, excess AW Units**

Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
San Martinez Canyon	Waters Avoided	1.27	0.79	1.00
	Temporary Impact	1.06	0.79	0.84
	Permanent Impact	0.22	0.79	0.17
	Total HARC AW Unit Impacted	***2.55***	**---**	***2.02***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	1.27	0.60	0.76
	Temporary Impact Areas	1.06	0.60	0.64
	Mitigation Establishment	6.80	0.60	4.08
	Total HARC AW Units Provided at San Martinez Grande Canyon	**9.13**	**---**	**5.48**
	At completion of Mitigation, does the San Martinez Grande Canyon Drainage provide Functions and Services equivalent or greater than Pre-Project?			**+3.46 , YES, excess AW Units**

Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
Santa Clara River	Waters Avoided	449.74	0.77	346.30
	Temporary Impact	15.71	0.77	12.10
	Permanent Impact	5.79	0.76	4.41
	Total HARC AW Unit Impacted	***471.24***	**---**	***362.81***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided	449.74	0.77	346.30
	Temporary Impact Areas	15.71	0.57	8.95
	Mayo Crossing Mitigation Establishment	15.90	0.80	12.72
	Mitigation Establishment at Long Canyon Bridge	2.70	0.80	2.16
	Total HARC AW Units Provided at Santa Clara River	**484.05**	**---**	**370.13**
	At completion of Mitigation, does the Santa Clara River provide Functions and Services equivalent or greater than Pre-Project?**			**+7.33 , YES, excess AW Units**

Jurisdiction Name	Description	Waters of the U.S. (including wetlands)	HARC TotalScore	Impact to HARC AW Units
Salt Creek Canyon	Waters Avoided	80.9	0.79	64.30
	Temporary Impact	7.27	0.79	5.78
	Permanent Impact	0.23	0.79	0.18
	Total HARC AW Unit Impacted	***88.4***	**---**	***70.26***
	Mitigation - HARC	**Post-Project Acres**	**Approx. HARC TotalScore**	**Provided HARC AW Units**
	Waters Avoided***	80.90	0.79	64.30
	Temporary Impact Areas***	7.27	0.79	5.78
	Salt Creek Mitigation Establishment	18.50	0.40	7.40
	Salt Creek Mitigation Enhancement	19.70	0.10	1.97
	Total HARC AW Units Provided at Salt Creek Drainage	**126.37**	**---**	**79.45**
	At completion of Mitigation, does Salt Creek provide Functions and Services equivalent or greater than Pre-Project?			**+9.19 , YES, excess AW Units**

* Temporary Impact at Landmark Village Agricultural Ditch ignored - related to enhancement under CDFG Mitigation Requirements.

** HARC AW Unit deficit at Lion Canyon is proposed to be offset by enhancement activities within the approx. 450 acres of Avoided Santa Clara River, (exotic vegetation control within this area is expected to raise general HARC Total Score by 0.05 Units, for a total of 22.5 AW Score Units), thereby offsetting the approximately (3) HARC AW Unit deficit. Enhancement will be provided irrespective of potential excess HARC AW Units related to the Mayo and other River Mitigation Establishment Activities.

*** A very conservative approach has been taken for Salt Creek HARC estimates, and is reflective of the level of planning currently completed at the mitigation sites. As more detail regarding the mitigation plans is obtained, a higher HARC AW Total Score is likely.

Attachment 4 - RMDP Biological Mitigation Measure BIO-2

California Department of Fish and Game
Master Streambed Alteration Agreement
Notification No. 1600-2004-0016-R5

Mitigation Measure BIO-2:

The permanent removal of existing habitats in Corps and/or CDFG jurisdictional areas in the Santa Clara River and tributaries shall be replaced by creating habitats of similar functions and values/services (see Mitigation Measure BIO 4 and Mitigation Measure SW-3 of Section 4.6 of the Final EIS/EIR) on the Project site, or as allowed under Mitigation Measure BIO 10.

a. Permanent impacts to Corps jurisdiction (which is a subset of CDFG jurisdiction) are to be mitigated by initiating mitigation site creation and/or restoration in advance of impacts, to replace the combined loss of acreage, functions, and services at a minimum 1:1 ratio. Initiation of a Corps mitigation site is defined as: (1) completion of site preparation; (2) installation of temporary irrigation; and (3) seeding and/or planting of the mitigation site. For detailed information, please refer to the Mitigation Plan for Impacts to Waters of the United States included in the Draft 404(b)(1) Alternatives Analysis in Appendix F1.0 of the Final EIS/EIR.

   The Salt Creek creation and restoration site and the Mayo Crossing restoration site (i.e., an existing agricultural field) are considered the initial sites to be implemented prior to Corps jurisdictional impacts by development, thereby establishing upfront mitigation credits. As individual Project components are proposed for construction, consistent with the construction notification, quantities of mitigation acreage required to offset permanent impact acreages shall be calculated and compared to pre-mitigation area credits remaining. A project would not proceed unless adequate mitigation capacity is demonstrated. Temporary impact areas shall be mitigated in place in a manner that restores impacted functions and services as described in the mitigation plan noted above. If upfront compensatory mitigation cannot be achieved, a Corps-approved method would be utilized to determine the additional compensatory mitigation to offset the temporal loss of functions and services not included in the 1:1 mitigation ratio for permanent impacts. These measures satisfy the Corps mitigation requirements for impacts to Corps jurisdictional areas.

   However, impacts to jurisdictional areas (which include all areas subject to Corps and/or CDFG jurisdiction) are also subject to all of the mitigation requirements for impacts to CDFG jurisdiction, including BIO-2b.

b. For permanent and temporary impacts to CDFG jurisdiction, consistent with the sub-notification, quantities of mitigation acreage required shall be calculated in accordance with the criteria below: If suitable mitigation sites have met success criteria (BIO-6) prior to disturbance at the impact site, the mitigation sites shall replace the permanently impacted habitats in kind at a 1:1 ratio. If a suitable

mitigation site has not met success criteria prior to disturbance of the impact site, habitat shall be replaced in kind (tributary for tributary impacts, river for river impacts) according to the replacement ratios specified in Table 4.5-68, below.

These ratios provide compensatory mitigation for temporal losses of riparian function by considering the existing functional condition of the resources to be impacted, as well as time required for different vegetation types to become established and mature. If a suitable mitigation site has not been initiated within two years following disturbance of the impact site, but is initiated within five years following such disturbance, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by Table 4.5-68, below, plus 0.5:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated three years after disturbance, the required replacement ratio would be 2.5:1.) If a suitable mitigation site has not been initiated within five years following disturbance of the impact site, the permanently impacted habitats shall be replaced in kind at a replacement ratio equal to the ratio required by Table 4.5-68, below, plus 1:1. (For example, if mitigation for impacts to high-quality mulefat scrub were initiated six years after disturbance, the required replacement ratio would be 3:1.)

Where temporary impacts to CDFG-jurisdictional areas are proposed, the mitigation acreage required shall be determined based upon the duration of the proposed construction disturbance and the type of vegetation to be impacted. As individual Project components are proposed for construction, consistent with the sub-notification process, the quantities of mitigation acreage required for temporary impacts to CDFG jurisdictional areas shall be calculated according to the following criteria: If suitable mitigation sites have met success criteria prior to temporary disturbance at the impact site, the mitigation sites shall replace the temporarily impacted habitats in kind at a 1:1 ratio regardless of the duration of the temporary disturbance.

If the duration of temporary disturbance is less than two years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. If the duration of temporary disturbance is between two and five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 1.5:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality.

If the duration of temporary disturbance exceeds five years, and no suitable mitigation sites have met success criteria prior to the disturbance, temporarily impacted habitats shall be replaced in kind at a 2:1 ratio, except for southern cottonwood/willow riparian forest and oak woodland habitats, which shall be

replaced in kind at a ratio of 1:1 if low quality, 1.5:1 if medium quality, and 2:1 if high quality. In lieu of the habitat replacement described above and subject to CDFG approval, removal of invasive, exotic plant species from existing CDFG jurisdictional areas, followed by restoration/revegetation, may also be used to offset impacts. If this method is employed, mitigation shall be credited at an acreage equivalent to the percentage of exotic vegetation present at the restoration site. For example, if a 10-acre jurisdictional area is occupied by 10% exotic species, restoration shall be credited for 1 acre of impact. If appropriate, as authorized by CDFG, reduced percentage credits may be applied for invasive removal with passive restoration (weeding and documentation of natural recruitment only).

Table 4.5-68
CDFG Jurisdictional Permanent Impacts Mitigation Ratios

Ratios Listed by Vegetation Types & Quality				
Vegetation Community	**Veg Code / ID**	**HIGH Reach Value*** (Mit. Ratio)	**MEDIUM Reach Value**** (Mit. Ratio)	**LOW Reach Value***** (Mit. Ratio)
Southern Cottonwood–Willow Riparian Forrest	SCWRF	4:1	3:1	2:1
Southern Willow Scrub	SWS	3:1	2.5:1	2:1
Oak Woodland (Coast Live, Valley)	CLOW / VOW	3:1	2.5:1	2:1
Big Sagebrush Scrub	BSS	2.5:1	2:1	1.5:1
Mexican Elderberry Scrub	MES	2.5:1	2:1	1.5:1
Cismontane Alkaline Marsh	CAM	2.5:1	2:1	1.5:1
Coastal and Valley Fresh Water Marsh	CFWM	2:1	1.5:1	1:1
Mulefat Scrub	MFS	2:1	1.5:1	1.25:1
Arrowweed Scrub	AWS	2:1	1.5:1	1:1
California Sagebrush scrub, and CSB-dominated habitats	CSB, CSB-A, -BS, -CB, -CHP, and -PS	2:1	1.5:1	1:1
Herbaceous Wetland	HW	1.5:1	1.25:1	1:1
River Wash, emergent veg.	RW	1.5:1	1.25:1	1:1
Chaparral, Chamise Chaparral	CHP, CC	1.5:1	1.25:1	1:1
Coyote Brush Scrub	CYS	1.5:1	1.25:1	1:1
Eriodictyon Scrub	EDS	1.5:1	1.25:1	1:1
California Grass Lands	CGL	1:1	1:1	1:1
Agricultural / Disturbed / Developed	AGR / DL / DEV	1:1	1:1	1:1

Notes:
* HIGH reach value indicates a portion of the Santa Clara River or main tributary that scored above 0.79 Total Score utilizing the HARC methodology described in **Section 4.2**, Geomorphology and Riparian Resources, of this EIS/EIR.
** MEDIUM reach value indicates a portion of the Santa Clara River or main tributary that scored between 0.4 and 0.79 Total Score utilizing the HARC methodology described in **Section 4.2.**
*** LOW reach value indicates a portion of the Santa Clara River or main tributary that scored below 0.4 Total Score utilizing the HARC methodology described in **Section 4.2.**

SURFACE WATER DIVERSION PLAN / AQUATIC SPECIES AVOIDANCE & EXCLUSION PLAN NEWHALL RANCH PROTOCOLS

Prepared for:

NEWHALL LAND AND FARMING COMPANY
Valencia, California

Prepared by:

ENTRIX, INC.
Ventura, CA

November 15, 2011

SURFACE WATER DIVERSION PLAN / AQUATIC SPECIES AVOIDANCE & EXCLUSION PLAN

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1.1 PROJECT BACKGROUND

The Newhall Ranch Specific Plan area is located downstream of Interstate 5, to the Los Angeles/Ventura County Line. The project area includes the Santa Clara River and many of its tributaries within this area. The Santa Clara River provides relatively intact riparian habitat, recognized as ecologically sensitive by county, state, and federal agencies due to its support of several listed animal and plant species. The tributaries are generally void of aquatic habitat, providing minimal opportunity for fish. The Newhall Ranch Specific Plan development includes temporary river crossings, new bridges, and bank stabilization along portions of the river flood plain. Construction will directly impact the wetted channel of the Santa Clara River during bridge pier construction, stream diversions, temporary bridge crossings, construction dewatering, and during any other in-stream construction activity. These activities require implementation of avoidance and exclusion measures for several sensitive aquatic species. This report discusses fish and other aquatic species avoidance and exclusion activities that may be implemented during these activities. Integral to aquatic species protection is the protection of water quality. Therefore this plan also discusses required water quality protections and BMPs required during RMDP project implementation where impacts to aquatic habitats may occur.

Sensitive fish species (Unarmored threespine stickleback (UTS), arroyo chub, and Santa Ana sucker) may be present throughout the Santa Clara River reach where the projects may occur. Other sensitive aquatic species potentially present include southwestern pond turtle, arroyo toad, and two-striped garter snake. The relative abundance of these species is dependent upon the intensity of the preceding storm season, spring and summer low flow channels and water temperatures, and other factors. Fish can be expected to be present in the area in varying abundance. Therefore, avoidance and minimization measures may be required anywhere work is conducted in the wetted channels, marshes, and backwaters if fish are present. Other aquatic and semi-aquatic species benefit from the implementation of these and other avoidance and minimization measures for fish. This plan discusses measures for sensitive aquatic and semi-aquatic species potentially present in work areas of the Santa Clara River and its tributaries.

1.2 PLAN PURPOSE AND NEED

Mitigation of impacts to aquatic habitats potentially occupied by sensitive aquatic species is primarily accomplished through avoidance mitigation measures. These measures include surveys, construction activity scheduling, spanning of wetted channels with temporary bridges, and other feasible measures to avoid work within wetted portions of the channel. Where construction must impact wetted portions of the channel (eg., temporary bridge is not feasible due to span length, bridge pier location falls within or adjacent to the wetted channel, active channel flow is within the construction limits of bank stabilization, or dewatering is necessary due to excavation depths), it will be

necessary to divert the flows. Significant dewatering operations, if conducted in proximity to the active channel, may result in drawdown of the active channel, simulating a stream diversion. Because this is a possibility for projects along the wetted channel, dewatering is addressed as a stream diversion in this plan.

In addition, RMDP project activities in close proximity to surface waters must implement construction water quality BMPs. Mitigation measures related to protection of water quality also benefit aquatic species and their habitats.

This report establishes a framework for water diversion activities including avoidance and exclusion of fish species from the work area. Diversion of flow and other methods to ensure adequate fish passage and habitat during construction activities are also presented in this report. Mitigation and monitoring strategies are presented at the end of this report to guide future implementation of these avoidance and exclusion methods.

This section describes the methods proposed to avoid and exclude aquatic species from the project area.

2.1 REGULATORY BACKGROUND

Fish are often monitored and/or relocated within areas of streams that are subject to a variety of construction activities. The U. S. Fish and Wildlife Service (USFWS) requires that any work with UTS be conducted by biologists that have proper permits (i.e., Incidental Take Permit 10(a)(1)(A) covering handling live specimens of the endangered unarmored threespine stickleback). The USFWS or their approved agents will conduct any handling of unarmored threespine stickleback. The other sensitive fish and aquatic species potentially present are considered species of special concern by the California Department Fish and Game (CDFG), therefore, only biologist with appropriate collection and handling permits may perform exclusion activities.

2.2 PRECONSTRUCTION SURVEY

During the planning stages of a project, attention should be paid to the scheduling of work within wetted portions of the river. Short duration construction activities should be performed during late summer/fall. Longer term projects may have to begin immediately after heavy winter storms and continue until the next storm season. Fish and aquatic species avoidance and exclusion activities may differ during these periods. Surveys for the presence/absence and relative abundance of fish and aquatic species should be performed well in advance of construction to determine what, if any, seasonal restrictions may need to be adhered to.

Pre-construction surveys and/or work within the wetted channel should not occur during fish spawn periods if fish are present, or suspected of being present. If work is anticipated to occur near the spawning period, then baseline surveys should be conducted in advance of winter storms and immediately after the storm season to provide a baseline of relative abundance and habitat quality for exclusion plan implementation. Because water and air temperatures, base flows, and vegetative growth are all factors in determining when spawning may occur, surveying of suitable habitats within the proposed work area should be conducted several times thru early spring. Within 30 days of the actual beginning of work in the wetted channel, a preconstruction survey should be conducted to determine the presence/absence and relative abundance of the target species. Both the project footprint and at least 300 feet of stream upstream and downstream of the limits of the project footprint should be surveyed. The relative number of fish of each species present, their life stages, and the current condition of the habitat would be recorded. Other sensitive aquatic species observed during focused pre-construction surveys would be relocated from the project area prior to activities within the aquatic habitats by a biologist possessing appropriate state permits.

2.3 PRECONSTRUCTION DIVERSION PLANNING

If diversion of the stream is anticipated, the terrain should be examined well in advance of construction to determine feasible methods to modify the flow channel to avoid the construction area. Terrace areas with native vegetation should be sought after for potential locations of diversion channels. It may be necessary to consider river bed sandy areas with minimal vegetation as potentially suitable for creation of vegetated channel habitat. Or for short duration projects, these areas may be evaluated for lined temporary flow channels.

If groundwater dewatering is anticipated, then the proximity of such activities to stream flows should be assessed. The potential for dewatering to affect surface water elevations or to contribute to excessive stream bed or bank erosion needs to be assessed both at the extraction points and at the discharge locations. This requires evaluation of surface water-ground water interactions, relative water levels, expected rain fall, bed and bank soils, and availability of discharge spreading grounds in comparison to the extent of proposed dewatering (ie. depth of excavations requiring dewatering, size of project – isolated pier excavation versus linear bank stabilization project). Dewatering plans must also use these evaluations to ensure that any dewatering discharge flows do not create artificial channel habitat that could become occupied by sensitive aquatic species, which would be entirely dependent upon continued pumping. Another consideration at the discharge is very high flow conditions, potentially elevating water surfaces, overtopping channel banks, or causing excessive channel bed erosion. A less likely occurrence, but of equal importance, is the drawdown of the ground water table to such an extent that the surface flows in the wetted channel are diminished or, for very long duration dewatering projects, stress of adjacent riparian vegetation becomes evident.

In either case, it will be necessary to ensure adequate aquatic habitat remains for any fish present in the wetted channel. The surveys and site evaluations are critical to the proper planning of any physical stream diversion, such as ensuring proper channel gradient and substrate, vegetative cover, and channel sustainability. An evaluation of the potential for such conditions is needed during the diversion planning stage.

2.4 AVOIDANCE

Where feasible, projects will be implemented in a manner that avoids impacts to the wetted channel and/or occupied habitats. This could involve utilizing construction methods that avoid entry into the wetted channel (eg., some bridges can be built from either end out over the water body with all work done “in the air above” without actually getting into the water, soil stabilization methods where dewatering is not required, or using temporary bridges for equipment crossing). In some cases, work may be planned to start immediately after winter storms have scoured the river sufficiently to have removed aquatic vegetation thereby minimizing available habitat for fish, or at times when fish populations are diminished or absent from project areas.

Another avoidance measure is to avoid fish refuge areas along the river. Three locations have been identified that provide fairly unique opportunities for fish to escape the

seasonal high flows, while remaining within suitable habitat along the margin of the river. The primary location, which has repeatedly been verified as occupied by UTS, is the Refuge site located near the Magic Mountain Theme Park parking lot area, upstream of the Newhall Ranch project limits. Two other potentially suitable locations have been identified within the limits of the Newhall Ranch Project; the confluence of Middle Canyon Creek with the Santa Clara River, and the confluence of Potrero Canyon with the Santa Clara River. Both of these locations may provide wetted channel in the form of flood plain tributaries which are beyond the influences of the main channel flows. Construction activities within or near these areas should be carefully planned as to avoid periods where fish may be utilizing the areas to escape high flood flows or other occurrences on the river.

2.5 EXCLUSION OF FISH FROM THE PROJECT AREA

If work cannot be avoided in the wetted channel then fish and other aquatic species must be removed from, and kept out of, the construction limits. In such cases the wetted channel to be impacted within the project area must first be blocked off so no aquatic species can enter during construction. The work area and the wetted channel including 50 to 100 foot buffer zones upstream and downstream can be isolated with block nets. These nets are typically one-eighth inch mesh and four to six feet deep (3 millimeter [mm] mesh, 1.2 to 1.8 meters [m] deep) to prevent small fish from going through the net. In the early spring when only larger fish are expected, this net might be as large as one quarter inch. The length of the nets will be sufficient to cross the entire active channel with sufficient length at both ends to account for some increase in wetted perimeter that occurs upstream of block nets due to their slight to major damming of the stream flow. The nets will be well weighted, usually with at least a one-ounce weight every six inches (15.2 centimeters [cm]) along the bottom. In addition, rocks or other heavy objects can be placed to keep the net on the bottom in fast flowing sections or areas with irregular channel bed surfaces. The net is supported in the stream with strong stakes, often rebar, t-posts, or wooden stakes pushed or driven into the substrate.

Once block nets are implemented, they must be maintained free of debris. It is important to use stout stakes since the nets can fill with trash, leaves, and other vegetation, become clogged and the pressure of the impounded or backed-up water can quickly compromise the nets either by overtopping or by pushing water around the margins on either side. Therefore, the nets must be checked frequently and cleared of any accumulated material or debris. Block netting with 1/8-inch mesh netting is not feasible at flows with high velocities (i.e., higher than 2 to 3 feet per second [fps]). Block netting of the low flows of the Santa Clara River is feasible during most of the year. During the heavy storm season, block netting is not practicable.

After deployment of block nets, fish and other aquatic species are removed from the exclusion zone. Multiple monitors under the direction of authorized biologists will move throughout the zone to relocate all fish and sensitive aquatic species from the block net area. Fish relocation efforts will be concentrated in the morning to avoid the heat of the day. Relocation of collected individuals will be to appropriate habitats downstream or other suitable location nearby but outside the project area and beyond block nets. Such

activities can be accomplished in a few hours early in the day while the air and water are relatively cool and stress to the fish is minimized. Other aquatic species are not as sensitive to air and water temperatures and may be relocated without restriction to early hours of the day. Recovered aquatic life may be placed and transported in water-filled buckets to be released downstream of the work site. A minimum of three full channel sweeps should be conducted to remove aquatic organisms prior to commencement of dewatering._

Block netting may also be implemented at the confluence of dewatering discharge and the active wetted channel to prevent fish from occupying any temporary flow channels. Other means to preclude fish from entering a discharge channel may also be employed, such as a small drop structure or other physical barrier to fish movement upstream.

2.6 FISH PASSAGE

Any modifications to the stream would be expected to mimic the natural stream flow as much as possible. Provision of fish passage (small southern California native species, including UTS) is necessary to maintain continuity of the fish populations upstream and downstream of the project area.

As discussed in the planning of bypass channels, velocities no higher than 2 foot per second are necessary. Maintenance of fish passage through a diversion is required only if the area is to be affected for long periods of time, essentially more than one annual season. Excluding small fish from the project area and temporarily restricting movement is not assumed to significantly affect the population. Passage is mostly discussed for upstream movement since small fish can easily go downstream through even fast-flowing areas as long as appropriate receiving habitat is present a short distance downstream and no screens or high falls (more than a few inches or so) are present. Specifications of flow under and around crossings and other stream modifications usually contain several factors. Thus, for any area being considered for fish passage, the following requirements should be met:

1. The passage area should be equal or greater in width than the width of the active channel bed (to maintain normal stream process).

2. For culverts carrying water at crossings, flow capacity should be sufficient to carry peak flows from waste water treatment plant discharges and any known or anticipated discharges from water supply systems (ie. Castaic Lake, DWP, MWD)

3. Natural watercourse bottom and hydraulic conditions will be preferentially selected for diversion channels. If such conditions are not present, the channel will be constructed in consultation with USFWS/CDFG and in accordance with the BMPs and mitigation measures provided in Section 3.1 and in BIO-44 and BIO-45 (Section 4.1).

4. A minimum of 20-cm (8 inches) water depth should be maintained for the whole length of the passage. If base-flow at the time of construction is such that run

habitat units have a mean depth of less than six inches, then the mean depth of the natural run habitats should be mimicked in the bypass channel.

5. Water velocities of less or equal to 60 centimeters per second (cm/s) (2 feet per second (fps)) if a coarse substrate is present or less or equal to 34 cm/s (1.2 fps) if a coarse substrate is not present.

6. The water surface blends smoothly with the natural channel at the up and downstream ends of the passage area. The coarseness and nature of the bottom material should maintain continuity through the passage area and not produce barriers to movement.

As incorporated in the above velocity requirements, substrate roughness locally slows the water velocity near the bottom and near the margins of the stream channel. Thus the average channel velocity can be higher since local areas in the channel will be low enough for fish passage. If surface flow is continuous through the project area, then the diversion structure should convey the appropriate amount of water downstream.

2.7 FISH STRANDING / RESCUE SURVEYS

During a diversion of flow from the existing wetted channel to a diversion channel it is possible that fish and other aquatic species remain in the abandoned channel. In addition, as discussed for dewatering above, it is possible that a dewatering discharge channel becomes occupied and then discharge is stopped, or a dewatering activity reduces the flow in the wetted channel such that species passage is no longer possible. Surveys for fish and other sensitive aquatic species will be conducted during these activities to ensure that no species remain in a dewatered area. Rescued species would be relocated to appropriate aquatic habitats.

This section discusses a general methodology for diverting surface water in river channels occupied by sensitive fish species. The surface water diversion alternatives discussed below are generic plans utilized on various instream projects conducted in the recent past in the Santa Clara River and other local watersheds.

Any diversion design that maintains conditions similar to the natural wetted river channel in the low flow season should allow for fish and other aquatic species passage as that represents conditions prior to the project. For this reason, a bypass channel is more desirable than culverts or other constrictions that increase flow velocities and often impede from movement upstream. As noted in more detail below, some portion of the channel needs to be in the 1 to 2 foot per second velocity regime to allow small fish, such as UTS, to move upstream.

3.1 DIVERSION BYPASS CHANNEL

Construction of an open, natural bottomed, diversion bypass channel is a preferred method when there is sufficient area within the floodplain to construct a channel and divert flow away from the work area.

The area to be considered for diversion should be as level and wide as possible so little or no change in gradient or flow velocity is induced by diverting the water (ie., no excessive channel bed erosion). The new channel should be constructed in a manner to minimize impact to riparian vegetation. Open river wash may be suitable for a short duration diversion, while a long term (ie. a full season) diversion may need to be constructed within an area already containing appropriate vegetative cover or is capable of being re-vegetated. If possible a recently abandoned secondary channel should be utilized. Such a secondary channel should require a minimum amount of excavation and likely will have some riparian or scrub habitat present.

A channel excavated on the wide river floodplain in the vicinity of the existing channel should naturally have a good mix of stream substrates for aquatic fauna and flora. Thus no augmentation of the substrate should be required in most locations on the river floodplain. If the diversion is done early in the spring, such as in March, little of the new seasonal marginal herbaceous vegetation will have developed. Thus the diversion of the water into a sparsely vegetated channel will not be much different than conditions in the wetted flow channel. If the work can be planned to require only one diversion each spring then the need to disrupt the habitat again in returning the channel to its former position would be avoided.

The channel can be allowed to maintain or re-establish a position during winter high flows. Leaving the channel to the fate of high winter flows only applies if the diversion channel is an open channel at or near the grade of the original channel. If flows need to be returned to the original channel, sediment may be discharged downstream. When

returning flows to the original channel, the discharge of sediment should be minimized by installing filter fabric, wattles or silt fencing downstream of the work area. Bypass flows should be introduced into the dewatered area at the lowest velocity possible to allow minimize erosion and turbidity. During the return of flows into the original channel from the diversion channel, a qualified biologist shall survey the de-watered temporary channel to ensure that aquatic organisms are not trapped or stranded. Trapped or stranded aquatic organisms will be placed in water-filled buckets for transport and release into the existing flow channel.

Steeper areas along the river channel are rare but if a diversion is needed in such an area more structural integrity may be needed to prevent erosion from compromising the new channel and allowing water to return into the original channel downstream. The upstream end of the diversion will have to be partially dammed with sand bags, rip-rap, sheet piles, inflatable dams, or other resistant materials and the new channel itself may need to be lined with plastic or other resistant material to prevent erosion. The channel will be protected from erosion or spillage of material from channel and basin banks and slopes using readily available BMPs. BMPs include the placement of filter fabric, silt fencing, straw bales, sand bags on cofferdam banks, channel banks and slopes.

3.2 PIPELINE BYPASS DIVERSION

Pipeline bypass diversions may be required at small tributary inlets with no special status aquatic species present. These divisions will route low-flows from tributaries around the work area. The diversions will consist of sand bag dams and dirt berms to impound flows and redirect them into a plastic pipeline by gravity flow or by pumping as necessary. Conditions or channel geometry may require the excavation of an upstream basin and standpipe to facilitate pumping. When using a gravity flow system, the pipeline will slope continuously downgrade and therefore may have to pass through or near the work area. In earthen bottom channels or basins the intake pipe end will be substantially above the bottom of the ponded water or excavated basin to avoid discharge of sediments.

If diverted water is discharged to the river, placement of effectively sized outlet protection underneath the pipeline outlet may be needed. Protection may be in the form of rock aprons, erosion control fabric, wattles, or silt fencing. Energy dissipation or other protection may not be necessary if the discharge is to an existing hardened structure (culvert, riprap or concrete), to deep water or a heavily vegetated area.· When designing the outlet project, flow depth, roughness, gradient, side slopes, discharge rate, and velocity will be considered. Routine water quality testing to ensure compliance with discharge requirements will be performed.

3.3 DIVERSION CAPACITY

In all cases the temporary bypass diversions should be designed to accommodate increased flows from several natural and man-made sources. This is true for any system at anytime of the year. Diversion of surface water should be scheduled during low flow conditions and outside of the normal precipitation season, normally from about December

1 to March 15. Regardless of the time of construction, weather reports should be consulted on a daily basis when a diversion is in operation.

Other considerations for variable flows include wastewater treatment plant discharge, municipal water supply agency operations, and the Castaic Lake dam annual water release operations. Prior to and during diversion activities, efforts should be made to coordinate with Los Angeles County Sanitation District and Department of Water Resources as to their projected discharge flows (both normal, scheduled maintenance, or during emergency releases). To the extent practical, the range of flows should be accommodated in the diversion design, and during diversion, contact with these entities should help to ensure appropriate response to any rapid decrease in flow through the diversion that could result in fish stranding. In addition, both the Los Angeles Department of Water and Power (DWP) and the Metropolitan Water District (MWD) have pipelines that cross the river and its tributaries upstream of the project area and can release water into the Santa Clara River. DWP also operates dams and water conveyance facilities on San Francisquito and Bouquet Canyon that might unexpectedly affect river flows downstream of these canyons. To the extent feasible, construction schedules should be coordinated with these entities for any scheduled maintenance that could result in significant flows thru the diversion, although these activities remain outside of the control of the project.

3.4 CULVERTED CROSSING

Culverted crossings, similar to those currently employed for agricultural crossings of the Santa Clara River, provide a feasible means to cross the wetted channel during the non-storm season. The use of culverts may be in conjunction with a bypass channel to allow construction equipment and materials to cross the river corridor during a bridge construction project, or simply as a temporary road crossing. As discussed above, avoidance measures, such as temporary construction bridges, will be explored and implemented as feasible prior to consideration of culvert crossings.

Culverts can be placed directly in the wetted channel flow. The culverts allow for an elevated road surface for vehicles to pass over, thus keeping equipment out of the active channel. Typically more than one culvert is used and the number is based on watershed size and current and expected flow conditions at the project site. Culverts are set in a sequential manner such that after one culvert is placed, the active flow channel is directed into that culvert while the next one is installed in the now non-flowing portion of the stream. After all the culverts are installed, backfill is placed over the culverts to create the elevated road surface. If non-riverbed soil materials are used for backfill, implementation of BMPs and soil stabilization (ie., silt fence, soil binders) along the limits of the road fill would be required to control siltation of the adjacent flowing waters. Typically, several culverts will pass the main flow, will additional culverts located in slightly elevated positions to handle any peak flows.

Culverts would provide a safer operating road crossing versus a temporary bridge, which has no permanent abutments, footings, or other supports. However, culvert placement is less desirable because culverts tend to increase flow speeds and often create velocity

barriers to upstream migration. Culverts will be avoided if at all possible due to the difficulty in preserving flow regimes in the 1 to 2 foot per second velocity range. Culverted crossings will also need to be installed and removed with similar exclusion activities as described above, as well as implementation of mitigation measures to protect water quality during removal activities where native riverbed materials were not used for the roadbed backfill.

Where culverted road crossings are necessary, additional stream enhancement may be proposed to provide adequate habitat for sensitive fish species. This may include pools of slow moving water above and below the culvert crossing, or other wetted channel features.

3.5 FISH PASSAGE

All such modifications to the stream would be expected to mimic the natural stream flow as much as possible. Provision of fish passage (small southern California native species, including UTS) is necessary to maintain continuity of the fish populations upstream and downstream of the project area. In the case of culverts, flow should be slow enough for fish to pass through in both directions. This may be infeasible in the many channel culverts, therefore other stream habitat enhancement may be implemented to provide fish passage in side channels away from the main flow channel. Passage is mostly discussed for upstream movement since small fish can easily go downstream though even fast-flowing areas as long as appropriate receiving habitat is present a short distance downstream and no screens or high falls (more than a few inches or so) are present. Specifications of flow under and around crossings and other stream modifications usually contain several factors. Thus, for any area being considered for fish passage, the following requirements should be met:

1. The passage area should be equal or greater in width than the width of the active channel bed (to maintain normal stream process).

2. For culverts carrying water at crossings, flow capacity should be sufficient to carry peak flows from Waste water treatment plant discharges and any known or anticipated discharges from water supply systems (ie. Castaic Lake, DWP, MWD)

3. Natural watercourse bottom and hydraulic condition is preferred, and if not present, additional BMPs and mitigation measures must be implemented to prevent excessive erosion or siltation of the aquatic habitats.

4. A minimum of 20-cm (8 inches) water depth should be maintained for the whole length of the passage. If base-flow at the time of construction is such that run habitat units have a mean depth of less than six inches, then the mean depth of the natural run habitats should be mimicked in the bypass channel.

5. Water velocities of less or equal to 60 centimeters per second (cm/s) (2 feet per second (fps)) if a coarse substrate is present or less or equal to 34 cm/s (1.2 fps) if a coarse substrate is not present.

6. The water surface blends smoothly with the natural channel at the up and downstream ends of the passage area. The coarseness and nature of the bottom material should maintain continuity through the passage area and not produce barriers to movement.

If surface flow is continuous through the project area, then the diversion structure should convey the appropriate amount of water downstream.

3.6 FISH STRANDING SURVEYS

During a diversion of flow from the existing wetted channel to a culvert it is possible that fish and other sensitive aquatic species remain in the abandoned channel. In addition, if a low flow channel is created to allow fish passage outside of the high velocity main channel, during periods of unusually low flow the channel could become dry. As the culverts are removed from service, fish could be stranded in areas outside of the primary flow channel. Surveys for aquatic species will be conducted during these activities to ensure that no species remain in a dewatered area. Species would be relocated to appropriate aquatic habitats.

3.7 SURFACE WATER PUMPING

At times, pumping of surface water is required to dewater the project area. Surface water pumping activities need to have adequate measures in place to ensure no species (fish and amphibian species are susceptible) become entrained or sucked into the pump. Screening of the pump intakes is the best way to avoid impacts to aquatic species. There are numerous methods that have been utilized by contractors to screen pump intakes. One successful method is to put the pump into a bucket or sufficient sized container and add gravel to the container. This method avoids issues with debris fouling the screens. If screens were utilized, 1/8th inch mesh would be required. Preferably the pump would be inserted into a sufficient sized container and screening be placed over the opening of the container. All screens need to be cleaned daily of debris. If the dewatered area was contiguous with the river flow during dewatering it must also be monitored for stranded species that may appear. Many dewatering projects utilize well points, and therefore do not present direct danger to fish as the withdrawal of water is from subsurface pumps in isolated well casings.

Pumping discharge is generally spread in floodplain areas away from the wetted channel, in many cases being beneficially used as agricultural irrigation, irrigation of riparian areas (either for mitigation obligations or as a general measure to support riparian vegetation growth along the margin of the river), or infiltrated at large holding pools. Water is generally allowed to sink back into the water table, or beneficially utilized within the site or surrounding agricultural operations. Where appropriate, direct discharge to the river may be authorized through the Los Angeles Regional Water Quality Control Board General NPDES Permit for Creekside Construction Dewatering. Depending on the amount of water produced, multiple settling pools may be needed. They need to be placed well away from the wetted channel to reduce the impact on stream flows and to ensure no excessive turbidity levels are created in the flowing

channel. If pumped water is discharged to the river, placement of effectively sized outlet protection underneath the pipeline outlet of where diverted water is discharged into stream may be needed. Protection may be in the form of rock aprons, erosion control fabric, wattles, or silt fencing. Energy dissipation or other protection may not be necessary if the discharge is to an existing hardened structure (culvert, riprap or concrete), to deep water or a heavily vegetated area.· When designing the outlet project, flow depth, roughness, gradient, side slopes, discharge rate, and velocity will be considered. Furthermore, authorizations for creekside dewatering from the LARWQCB require routine water quality testing to ensure compliance with discharge requirements.

4.1 MITIGATION MONITORING

Following is a mitigation strategy and mitigation measures incorporated into applicable permits for the Newhall Ranch Project. These measures are required to be implemented for sensitive species avoidance and exclusion during construction of RMDP components, primarily Bridges over the Santa Clara River, Bank Stabilization along the Santa Clara River, and temporary haul routes crossing the Santa Clara River.

SEE RMDP Master Streambed Agreement BIO-14, and BIO-43 thru BIO-49

BIO-14 Temporary impacts from construction activities in the riverbed shall be restricted to the following areas of disturbance: (1) an 85-foot-wide zone that extends into the river from the base of the rip-rap or gunite bank protection where it intercepts the river bottom; (2) 100 feet on either side of the outer edge of a new bridge or bridge to be modified; (3) a 60-foot-wide corridor for utility lines; (4) 20-foot-wide temporary access ramps; and (5) 60-foot roadway width temporary construction haul routes. The locations of these temporary construction sites and the routes of all access roads shall be shown on maps submitted with the sub-notification letter submitted to the Corps and CDFG for individual project approval. Any variation from these limits shall be submitted, with a justification for a variation for Corps and CDFG approval. The construction plans should indicate what type of vegetation, if any, would be temporarily disturbed or removed and the post-construction activities to facilitate revegetation of the temporarily impacted areas.

The boundaries of the construction site and any temporary access roads within the riverbed shall be marked in the field with stakes and flagging. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside the work area and access roads.

BIO-43 Prior to initiating construction for the installation of bridges, storm drain outlets, utility lines, bank protection, trails, and/or other construction activities that impact the wetted channel, aquatic habitats within construction sites and access roads, as well as all aquatic habitats within 300 feet of construction sites and access roads, shall be surveyed by a qualified biologist for the presence of the unarmored threespine stickleback, arroyo chub, and Santa Ana sucker. The Corps and the CDFG shall be notified at least 10 days prior to the survey and shall have the option of attending. The biologist shall file a written report of the survey with both agencies within 14 days of the survey and no later than 10 days prior to any construction work in the riverbed. If there is evidence that fish

spawn has occurred in the survey area, then surveys shall cease unless otherwise authorized by USFWS.

Construction within aquatic habitats shall only occur when it is determined that juvenile fish are not present within the Project area.

BIO-44 Temporary bridges, culvert crossings, or other feasible methods of providing access across the river shall be constructed outside of the winter season and not during periods when spawning is occurring. Prior to the construction of any temporary or permanent crossing of the Santa Clara River, the permittee and/or subpermittee shall develop a Stream Crossing and Diversion Plan. The plan shall include the following elements: the timing and methods for pre-construction aquatic species surveys; a detailed description of the diversion methods (e.g., berms shall be constructed of on site alluvium materials of low silt content, inflatable dams, sand bags, or other approved materials); special-status species relocation; fish exclusion techniques, including the use of block netting and fish relocation; methods to maintain fish passage during construction; channel habitat enhancement, including the placement of vegetation, rocks, and boulders to produce riffle habitat; fish stranding surveys; and the techniques for the removal of crossings prior to winter storm flows. The Plan shall be submitted to the USFWS and CDFG for approval at least 30 days prior to implementation.

If adult special-status fishes are present and spawning has not occurred, they shall be relocated prior to the diversion or crossing. Block nets of 1/8-inch woven mesh will be set upstream and downstream. On days with possible high temperature or low humidity (temperatures in excess of 80° F), work will be done in the early morning hours, as soon as sufficient light is available, to avoid exposing fishes to high temperatures and/or low humidity. If high temperatures are present, the fishes will be herded to downstream areas past the block net. Once the fishes have been excluded by herding, a USFWS staff member or his or her agents shall inspect the site for remaining or stranded fish. A USFWS staff member or his or her agents shall relocate the fish to suitable habitat outside the Project area (including those areas potentially subject to high turbidity). During the diversion/relocation of fishes, the USFWS or his or her agents shall be present at all times.

BIO-45 a. Stream diversion bypass channels: Stream diversion bypass channels will be constructed when the active wetted channel is within the work zone. Diversion bypass channels will be built in accordance with BIO-44 and in consultation with CDFG/USFWS. Equipment shall not be operated in areas of ponded or flowing water unless authorized by CDFG/USFWS. The diversion channel shall be of a width and depth comparable to the natural river channel. In all cases where flowing water is diverted from a segment of the stream channel, the bypass channel will be constructed prior to the diversion of the active stream. The bypass channel will be constructed prior to diverting the stream, beginning

in the downstream area and continuing in an upstream direction. Where feasible and in consultation with CDFG/USFWS, the configuration of the diversion channel will be curved (sinuous) with multiple sets of obstructions (i.e., boulders, large logs, or other CDFG/USFWS-approved materials) placed in the channel at the point of each curve (i.e., on alternating sides of the channel).

If emergent aquatic vegetation is present in the original channel, the permittee and/or subpermittee will transplant suitable vegetation into the diversion channel and on the banks prior to or at the time of the water diversion. A qualified restoration ecologist will supervise the construction of the diversion channels on site. The integrity of the channel and diversion shall be maintained throughout the intended diversion period. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Construction of diversion channels shall not occur if surveys determine that gravid fish are present, spawning has recently occurred, or juvenile fish are present in the proposed construction areas. At the conclusion of the diversion, either at the commencement of the winter season, or the completion of construction, the permittee and/or subpermittee will coordinate with CDFG/USFWS to determine if the diversion should be left in place or the stream returned to the original channel.

If CDFG/USFWS determine the stream should be diverted to the original channel, the original channel will be modified prior to re-diversion (i.e., while dry) to construct curves (sinuosity) into that channel, including the placement of obstructions (i.e., boulders, large logs, or other CDFG/USFWS-approved materials). The original channel will be replanted with emergent vegetation as the diversion channel was planted. If the diversion channel is abandoned, the boulders will remain in place. b. Dewatering: Construction dewatering in close proximity to stream flow shall implement the following: Assess local stream and groundwater conditions, including flow depths, groundwater elevations, and anticipated dewatering cone of influence (radius of draw down). Assess surface water elevations upstream, adjacent to, and downstream of the extraction points, to assess any critical flow regimes susceptible to excessive draw down and therefore fish stranding issues.

Assess surface water elevations downstream of the discharge locations (if discharge is proposed to the flowing stream) to assess any flow regimes and overbank areas that may be susceptible to flooding and therefore fish stranding at the cessation of discharge. Discharge locations shall also be assessed for potential channel bed erosion from dewatering discharge, and appropriate BMPs must be implemented to prevent excessive erosion or turbidity in the discharge. The information above shall be summarized and provided in a plan approved by

CDFG and Corps. Fish shall be excluded from any artificial flowing channels from dewatering discharge. Methods to ensure separation may include, but are not limited to: block netting at the confluence; creation of a physical drop greater than four inches at the confluence; or maintaining a velocity range unsuitable for fish passage, such as a berm at the confluence with small diameter pipes for discharge.

BIO-46 During any stream diversion or culvert installation activity, a qualified biologist(s) shall be present and shall patrol the areas within, upstream, and downstream of the work area. The biologists shall inspect the diversion and inspect for stranded fish or other aquatic organisms. Under no circumstances shall the unarmored threespine stickleback be collected or relocated, unless USFWS personnel or their agents implement this measure. Any event involving stranded fish shall be recorded and reported to CDFG and USFWS within 24 hours.

BIO-47 Slow moving water habitats shall be constructed upstream and downstream of any river crossing or bridge construction area to provide refuge for special-status fishes during construction. Where feasible and in consultation with CDFG and USFWS, the permittee and/or subpermittee shall enhance slow-moving water habitats for each linear foot disturbed by hand-excavating shallow side channels and placing multiple sets of obstructions (e.g., boulders, large logs, or other CDFG- and USFWS-approved materials) in the channel.

BIO-48 Installation of bridges, culverts, or other structures shall not impair the movement of fish and aquatic life. Bottoms of temporary culverts shall be placed at or below channel grade. Bottoms of permanent culverts shall be placed below channel grade. Culvert crossings shall include provisions for a low flow channel where velocities are less than two feet per second to allow fish passage.

BIO-49 Water containing mud, silt, or other pollutants from construction activities shall not be allowed to enter a flowing stream or be placed in locations that may be subject to normal storm flows during periods when storm flows can reasonably be expected to occur.

BIO-52 (1) Prior to grading and construction activities, a qualified biologist shall be retained to conduct a Worker Environmental Awareness Program (WEAP) for all construction/contractor personnel. A list of construction personnel who have completed training prior to the start of construction shall be maintained on site and this list shall be updated as required when new personnel start work. No construction worker may work in the field for more than five days without participating in the WEAP. Night work and use of lights on equipment shall not be allowed unless CDFG approves of the night work and use of lights. Lighting shall not be used where threatened or endangered species occur. Lights shall be

directed from natural areas and remain 200 feet away from natural areas unless otherwise approved by CDFG. (2) The qualified biologist shall provide ongoing guidance to construction personnel and contractors to ensure compliance with environmental/permit regulations and mitigation measures. The qualified biologist shall perform the following:

• Provide training materials and briefings to all personnel working on site. The material shall include but not be limited to the identification and status of plant and wildlife species, significant natural plant community habitats (e.g., riparian), fire protection measures, and review of mitigation requirements.

BIO-70 Construction plans shall include necessary design features and construction notes to ensure protection of vegetation communities and special-status plant and aquatic wildlife species adjacent to construction. In addition to applicable erosion control plans and performance under SCAQMD Rule 403d dust control (SCAQMD 2005), the Project stormwater pollution prevention plan (SWPPP) shall include the following minimum BMPs. Together, the implementation of these requirements shall ensure protection of adjacent habitats and wildlife species during construction. At a minimum, the following measures/restrictions shall be incorporated into the SWPPP, and noted on construction plans where appropriate, to avoid impacting special status species during construction: • Avoid planting or seeding invasive species in development areas within 200 feet of native vegetation communities.

• Provide location and details for any dust control fencing along Project boundaries (BIO 71).

• Vehicles shall not be driven or equipment operated in areas of ponded or flowing water, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in the 404 Permit or 1603 Agreement.

• Silt settling basins installed during the construction process shall be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes.

• If a stream channel has been altered during the construction and/or maintenance operations, its low flow channel shall be returned as nearly as practical to pre-Project topographic conditions without creating a possible future bank erosion problem or a flat, wide channel or sluice-like area. The gradient of the streambed shall be returned to pre- Project grade, to the extent practical, unless it represents a wetland restoration area.

• Temporary structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the high water mark before such flows occur.

- Staging/storage areas for construction equipment and materials shall be located outside of the ordinary high water mark.

- Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that could be deleterious to aquatic life if introduced to water.

- Stationary equipment such as motors, pumps, generators, and welders which may be located within the riverbed construction zone shall be positioned over drip pans. No fuel storage tanks shall be allowed in the riverbed.

- No debris, bark, slash sawdust, rubbish, cement or concrete or washing thereof, oil, petroleum products, or other organic material from any construction, or associated activity of whatever nature, shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, watercourses included in the permit. When construction operations are completed, any excess materials or debris shall be removed from the work area.

- No equipment maintenance shall be done within or near any stream where petroleum products or other pollutants from the equipment may enter these areas with stream flow.

- The operator shall install and use fully covered trash receptacles to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash.

- The operator shall not permit pets on or adjacent to the construction site.

- No guns or other weapons are allowed on the construction site during construction, with the exception of the security personnel and only for security functions. No hunting shall be authorized/permitted during construction.

- The Permittee shall apply any herbicides/pesticides in accordance with state and federal law. No herbicides/pesticides shall be used where threatened or endangered species occur. No herbicides/pesticides shall be sprayed when wind velocities are above 5 miles per hour.

RMDP Section 7.7.1 Additional Maintenance Provision: Native vegetation within temporary maintenance work areas may be mulched and spread, where appropriate, over the temporary impact areas once maintenance work is complete in order to facilitate revegetation. If vegetation is cut to ground level only, with the likelihood of re-growth, then cuttings may be removed from the maintenance site for recycling.

Temporary sediment retention ponds shall be constructed downstream of maintenance sites which involve grading or excavating, and that contain flowing

or pounded water that drains off site into the undisturbed stream flow or ponds. The sediment ponds shall be constructed of riverbed material and shall prevent sediment-laden water from reaching undisturbed ponds or stream flows. To the extent feasible, ponds shall be located in barren or sandy river bottom areas devoid of existing riparian scrub, riparian woodland, or aquatic habitat. The ponds shall be maintained and repaired after flooding events, and shall be restored to pre-disturbance grades and substrate conditions within 30 days after maintenance work has ended.

Pre-construction surveys are also required for Aquatic and Semi-aquatic special status species as described in the mitigation measures below (parenthetical summary measures provided, please see Fish and Game MSAA permit for full text):

BIO-17 (Conduct focused surveys for arroyo toad and, if present, implement measures required by the USFWS Biological Opinion for arroyo toad, and develop and implement a monitoring plan in consultation with the USFWS and CDFG)

BIO-18 (Conduct focused surveys for California red-legged frog and, if present, implement measures required by the USFWS Biological Opinion for California red-legged frog, and develop and implement a monitoring plan in consultation with the USFWS and CDFG)

BIO-50 (Conduct focused surveys for southwestern pond turtle and, if present, prepare and implement a monitoring plan)

BIO-53 (pre-construction surveys and habitat creation for western spadefoot toad)

BIO-89 (pre-construction surveys and relocation of two-striped garter snake and south coast garter snake)

The RMDP also contains a Maintenance Manual (Appendix) for storm flow conveyance and water quality treatment facilities (i.e., WQ Basins, swales, infiltration basins, etc). The diversion discussions above also apply to management and/or diversion of flows within the storm drain systems, however, many of the biological concerns discussed in the preceding text do not apply to such flows as they are generally devoid of native species. Measures to prevent contamination of downstream waters and surveys to confirm presence/absence of sensitive species do apply.

Flosi, G., S. Downie, J. Hopelain, M. Bird, R. Cooey, and B. Collins. 1998. California Salmonid Stream Habitat Restoration Manual Vol. II. State of California, The Resource Agency, California Department of Fish and Game, Inland Fisheries Division.

Taylor. R. and M. Love. 2003. Part IX. Fish Passage Evaluation at stream crossings. v + 64 pp., 3 appendices. IN: Flosi, G., S. Downie, J. Hopelain, M. Bird, R. Cooey, and B. Collins. 1998. California Salmonid Stream Habitat Restoration Manual Vol. II. State of California, The Resource Agency, California Department of Fish and Game, Inland Fisheries Division.

Whoriskey, F. G. and R. J. Wooton. 1987. The swimming endurance of three spine sticklebacks, *Gasterosteus aculeatus* L., from the Afon Rheidol. J. Fish Biology, 30:335-339.

Appendix 2F

Clean Water Act Section 404 Permit

United States Army Corps of Engineers

October 17, 2012

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO
ATTENTION OF

October 17, 2012

Office of the Chief
Regulatory Division

The Newhall Land and Farming Company
Attention: Matt Carpenter
25124 Springfield Court, Suite 300
Valencia, California 91355-2103

Dear Mr. Carpenter:

Enclosed you will find a signed copy of your Department of the Army Permit (File No. 2003-01264-AOA). Please retain this copy for your files.

Thank you for participating in our regulatory program. Should you have any questions, please contact me at 213-452-3961, or your staff can contact Dr. Aaron O. Allen, North Coast Branch Chief of our Regulatory Division at 805-585-2148 or via e-mail at Aaron.O.Allen@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

"Building Strong and Taking Care of People!"

Sincerely,

R. Mark Toy, P.E.
Colonel, US Army
Commander and District Engineer

Enclosure

LOS ANGELES DISTRICT
U.S. ARMY CORPS OF ENGINEERS

DEPARTMENT OF THE ARMY PERMIT

Permittee: The Newhall Land and Farming Company

Permit Number: SPL-2003-01264-AOA

Issuing Office: Los Angeles District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To permanently discharge fill onto 47.9 acres of waters of the U.S., including 5.1 acres of wetlands, and to temporarily discharge fill onto 35.3 acres of waters of the U.S., including 11.8 acres of wetlands, in association with grading, construction and maintenance of infrastructure including roads, utilities and flood control structures for the Newhall Ranch Resource Management and Development Plan (RMDP), as described in the Final Newhall Ranch Project Description dated August 11, 2011 and as shown on the attached drawings.

Specifically, you are authorized to:

1. Permanently impact 47.9 acres of waters of the United States, including 5.1 acres of wetlands, associated with discharges of fill material for bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); drainage facilities such as storm drains or outlets and partially lined open channels; grade control structures; bridges and drainage crossings; building pads; and water quality control facilities (sedimentation control, flood control, debris, and water quality basins).

2. Temporarily impact 35.3 acres of waters of the United States, including 11.8 acres of wetlands, associated with the construction of bank protection to protect land development projects along water courses (including buried soil cement, buried gunite, grouted riprap, ungrouted riprap, and gunite lining); utility crossings; activities associated with construction of a Water Reclamation Plant (WRP) adjacent to the Santa Clara River and required bank protection; water quality control facilities (sedimentation control, flood

control, debris, and water quality basins); regular and ongoing maintenance of all flood, drainage, and water quality protection structures and facilities on the RMDP site (such activities would include periodic inspection of structures and monitoring of vegetation growth and sediment buildup to ensure that the integrity of the structures is maintained and that planned conveyance capacity is present, routine repairs and maintenance of bridges and bank protection, and emergency maintenance activities); and temporary haul routes for grading equipment and geotechnical survey activities.

3. Construct 35 outlets in the Santa Clara River; construct two bridges in the Santa Clara River (Commerce Center bridge and the Long Canyon bridge); construct three bridges and 13 culvert road crossings in tributary drainages; and construct other infrastructure including roads, utilities and flood control structures, as described in the Final Newhall Ranch Project Description dated August 11, 2011.

Project Location: The 12,000-acre project site encompasses approximately 5.5 linear miles of the Santa Clara River and several tributaries including Potrero Canyon, Long Canyon, Middle Canyon, San Martinez Grande Canyon and Chiquito Canyon near Santa Clarita, northwestern Los Angeles County, California (at lat: 34-24-5.0040 lon: 118-37-46.9920).

Permit Conditions:

General Conditions:

1. The time limit for completing the authorized activity ends on **October 19, 2032.** If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

Special Conditions:

1. The permittee shall preserve and protect in perpetuity 612.2 acres of waters of the United States, including 271.8 acres of wetlands consistent with the Mitigation and Monitoring Plan for the Newhall Ranch Resource Management and Development Project, Santa Clarita, California dated August 2011, and prepared by Dudek, Inc. (Mitigation Plan). The permittee shall protect the 612.2 acres with a conservation easement (CE) or restrictive covenant (RC) in accordance with Special Condition 7.

2. The permittee shall compensate for permanent impacts to 47.9 acres of waters of the United States, including 5.1 acres of wetlands, in the Santa Clara River and tributary drainages by rehabilitating, enhancing and establishing 114.04 acres of waters of the United States, including 35.2 acres of wetlands, that provide functions and services equal to those in the permanent impact areas, as stipulated in the Mitigation Plan. In addition, the permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection in accordance with Special Condition 29 over 119 acres, including 89 acres of waters of the United States in the Santa Clara River immediately downstream of the project area. To demonstrate a minimum of 1:1 replacement of functions and services, permanent impact and compensatory mitigation areas shall be compared annually using HARC-AW (Hybrid Assessment of Riparian Condition - Area Weighted) units and/or a similar Corps-approved method to assess functions and services as described in the above Mitigation Plan. For the purposes of this special condition, "implementation" of a mitigation site is defined as: a) preparation and approval by the Corps of a site specific mitigation plan; b) completion of site preparation; c) installation of temporary irrigation; d) seeding and/or planting of the mitigation site as stipulated in the Mitigation Plan; and e) as-built drawings of the mitigation grading, planting, and irrigation submitted to the Corps. The required compensatory mitigation shall include the following:

a. The permittee shall implement 54.9 acres of compensatory mitigation in the form of establishment, rehabilitation and enhancement in lower Potrero Canyon (19.3 acres), the Mayo Crossing site (15.9 acres) and the upper Salt Creek watershed (19.7 acres) prior to any permanent impacts to waters of the United States;

b. The permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection over 119 acres, including 89 acres of waters of the United States, in the Santa Clara River immediately downstream of the project area, as shown on Exhibit 1 attached hereto, and the permittee shall submit a copy of the recorded Declaration of Restrictive Covenant for Floodplain Protection to the Corps prior to any permanent impacts to waters of the United States;

c. The permittee shall implement a minimum of 59.14 acres of mitigation establishment, rehabilitation and enhancement consistent with the Mitigation Plan, Section 1.3.1 and Table 1, Development Project and Associated Mitigation. Compensatory mitigation for each phase of the project shall be implemented prior to or within two years of the impacts to waters of the United States for that phase of the project.

The permittee's responsibility to complete the required compensatory mitigation shall not be considered fulfilled until they have met or exceeded all performance criteria and have written verification of successful completion of the compensatory mitigation requirement from the Corps. If any compensatory mitigation site fails to meet the performance criteria, including acreage and functions and services, after ten years of monitoring, the permittee shall provide additional compensatory mitigation to offset the unmitigated permanent impacts, as required by the Corps to ensure a minimum 1:1 replacement of functions and services.

3. The permittee shall mitigate all temporary construction impacts affecting waters of the United States, by restoring pre-project contours and revegetating temporary impact areas with appropriate native vegetation after completion of construction in the area, in accordance with the Mitigation Plan. At a minimum, the acreage and functions and services of the revegetation area shall equal or exceed the acreage and functions and services of the temporary impact areas. Functions and services for temporary impact and revegetation areas shall be compared annually using HARC-AW units and/or a similar Corps-approved method to assess functions and services as described in the Mitigation Plan. The permittee's responsibility to complete the required revegetation as set forth in this Special Condition shall not be considered fulfilled until they have met or exceeded all performance criteria for a given site and have written verification of successful rehabilitation of the specific temporary impact area from the Corps. If a review area fails to meet the performance criteria, including no net loss of functions and services, after five years of monitoring, the permittee shall provide compensatory mitigation to offset the unmitigated temporary impacts as required by the Corps to ensure a minimum 1:1 replacement of functions and services.

4. Prior to initiation of the various phases of grading and project construction in waters of the United States, as described in Table 1 of the Mitigation Plan, the permittee shall provide written notification ("Construction Notification") to the Corps. The Construction Notification shall include the following:

a. An updated preliminary or approved jurisdictional delineation of waters of the United States and a site-specific mitigation plan as defined in Special Condition 5 and the Mitigation Plan. Based on the updated jurisdictional delineation, the acreages and locations of all impacts to waters of the United States, as well as the acreage and location of the recalculated compensatory mitigation shall be included in the required notification;

b. Written description for all the proposed structures (including RMDP Project Name), a description of the permanent and temporary impacts in waters of the United States, maps showing project location, impact acreages and drawings for all proposed structures, written documentation regarding compliance with all applicable special conditions of this permit and a description of all measures to avoid and minimize impacts to waters of the United States;

c. Name and address of contractor performing the work, an onsite point of contact and the size and type of equipment that shall be performing the work;

d. For projects located in the Potrero Canyon watershed, a written description documenting compliance with the required design criteria for grade control structures (Special Condition 25) and road crossings (Special Condition 26);

e. Schedule for beginning and ending the project; and

f. Summary of all temporary and permanent impacts to waters of the United States that have been completed as part of previous project phases as well as a summary of all the initiated and completed compensatory mitigation areas for previous project phases.

Upon receipt of a Construction Notification, the Corps will determine whether the activity is authorized by this permit. If the activity is not authorized, the Corps will notify the permittee that they may request that the Corps modify the permit to include the activity as described in the procedures at 33 C.F.R. Part 325.7. If the activity is authorized by the permit, the Corps will determine if the avoidance and minimization measures in the Construction Notification and the site-specific compensatory mitigation plan comply with the terms and conditions of this permit. If the Corps determines that the proposed activity complies with the terms and conditions of the permit, a Notice to Proceed will be issued to the permittee. If the Corps determines that that all or part of the proposed activity does not comply with the terms and conditions of the permit, the Corps will issue a letter stating that the proposed activity does not meet the terms and conditions of the permit and, as a result, the proposed discharges of fill material in waters of the United States are not authorized. No work in waters of the United States shall occur until the permittee has received a Notice to Proceed from the Corps that states that the proposed discharges of fill material in waters of the United States comply with the terms and conditions of this permit.

5. As stipulated in the Mitigation Plan, the permittee shall prepare a site-specific mitigation plan subject to Corps approval as part of the required Construction Notification in Special Condition 4. Once the Corps has approved the site-specific mitigation plan, the permittee shall implement all the terms and conditions stipulated in the site-specific mitigation plan in full. The site specific mitigation plan shall include all the information specified in 33 C.F.R. Part 332.4(c)(2)-(14) including:

a. identify the goals (objectives) of the plan (see section 2.0 of the Mitigation Plan) and includes a description of the process of selecting the compensatory mitigation sites (see Section 3.0);
b. identify site protection instruments that are proposed for the compensatory mitigation areas (see section 2.1 of the Mitigation Plan ["All compensatory mitigation areas . . . would be protected in perpetuity by a conservation easement or covenant."]);
c. include existing baseline information (see sections 1.4 and 3.4 of the Mitigation Plan);
d. state that the HARC methodology is used to evaluate and characterize the functional quality of waters of the United States, including wetlands, and that HARC-AW scores were used to select mitigation sites and determine the appropriate acreage of the required compensatory mitigation (see sections 1.5.1 and 2.1 of the Mitigation Plan);
e. contain extensive mitigation plan information (see sections 2.0, 3.0, and 4.0 of the Mitigation Plan);
f. include a description of the maintenance activities to be conducted during the required monitoring (see section 5.0 of the Mitigation Plan);
g. set forth performance criteria (see sections 6.1 through 6.4 of the Mitigation Plan);
h. describe the compensatory mitigation monitoring requirements (see sections 6.5 through 6.7 of the Mitigation Plan);

i. contain a long-term management plan component (see section 9.0 of the Mitigation Plan - includes at a minimum trash removal; invasive, non-native plant species removal; repairs and maintenance to fencing and signage; and repair of damage to the mitigation area);

j. include an adaptive management plan (see section 8.5 of the Mitigation Plan);

k. describes the financial assurances required to ensure successful completion of the mitigation and maintenance and monitoring programs (see section 4.3 of the mitigation Plan);

l. provide all final specifications and topography-based layout grading, planting, and irrigation (with 0.5-foot contours). All wetland mitigation areas shall be graded to the same elevation as the adjacent existing wetlands and/or within approximately one foot of the groundwater table, and shall be left in a rough grade state with microtopographic relief (including channels) that mimics natural wetland topography, as directed by the Corps. Planting and irrigation shall not be installed until the Corps has approved the mitigation site grading. The permittee shall contact the Corps for verification of proper grading of the mitigation site a minimum of 15 days prior to the planned date of initiating planting;

m. require that all planting shall be installed in such a manner that mimics natural plant distribution (e.g., random distribution rather than uniform rows);

n. within 45 calendar days of complete installation for each mitigation site, require as-built drawings of the mitigation grading, planting, and irrigation infrastructure to the Corps;

o. require at the first anniversary of plant installation, all dead plants shall be replaced unless their function has been replaced by natural recruitment as verified by the Corps;

p. include a final implementation schedule that indicates when all wetland/waters impacts, as well as mitigation site grading, planting, and irrigation shall begin and end;

q. require a minimum of five years of maintenance, monitoring and attainment of performance criteria for all waters of the United States, including wetlands, mitigation areas;

r. include planting pallets (plant species, size, and number per acre) and seed mix (plant species and pounds per acre); and

s. require a wetland delineation to confirm that Corps jurisdictional wetlands have been successfully created prior to Corps final approval of the mitigation.

6. Prior to permanent impacts to waters of the United States for each phase of the authorized project, the permittee shall post financial assurance in an amount and form approved by the Corps Regulatory Division to ensure a high level of confidence that the compensatory mitigation projects will be successfully completed, in accordance with applicable performance criteria. Mitigation areas required in Special Condition 2a and 2c may be secured by separate financial assurances and approval of the financial assurances will be provided with the approval of the Construction Notification for each phase of the project (Phases 1 through 6). The financial assurance may be in the form of a performance bond, escrow account, letter of credit or other appropriate instruments, subject the approval of the Corps. Our preferred form of a financial assurance is a letter of credit. For letters of credit, the credit must be issued by a federally insured financial institution rated investment grade or higher. The required financial assurance for some project phases may take the form of a letter of credit, escrow account or surety bond that is held by the CDFG, subject to the approval of the Corps Regulatory Division. For performance bonds, the corporate surety must appear on the Department of Treasury

Circular 570, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies. For a current list of Treasury-authorized companies, write or call the Surety Bond Branch, Financial Management Services, Department of the Treasury, Washington DC 20227; (202) 874-6850 or at the following website: http://www.fms.treas.gov/c570/c570.html. The financial assurance shall be released only upon a determination by the Corps Regulatory Division that successful mitigation has been completed for the given phase of the project.

7. The permittee shall record conservation easements (CE) or restrictive covenants (RC) to protect the 612.2 acres of preserved waters of the United States and 114.04 acres of compensatory mitigation. The approximate boundaries and phasing of the CEs and RCs are shown in the attached Figure 12 and Table 10: LEDPA Conservation Land Dedication/Recordation Schedule, but the final boundaries and acreages to be protected by the CEs/RCs shall be determined by the Corps, in coordination with the California Department of Fish and Game (CDFG). If the permittee does not record the required CE or RC according to the schedule in Table 10, subsequent discharges of fill material in waters of the United States are not authorized until the required CE or RC for the previous phase is recorded. The CE or RC shall be in a form approved by the Corps' Regulatory Division, which shall run with the land, obligating the permittee, its successors and assigns to protect and maintain the preserved waters of the United States and compensatory mitigation areas. The CE must include a qualified third-party easement holder pursuant to California Civil Code 815.3 and Government Code section 65965. The permittee must provide monies in the form of an endowment (endowment amount to be determined by Property Analysis Record or similar methodology) for the purposes of fulfilling the third-party easement holder's responsibilities under the CE, including long-term maintenance activities described in the long-term management section of the Mitigation Plan and site-specific mitigation plan, and compliance inspections one or more times per year. The CE or RC shall preclude establishment of fuel modification zones, paved public trails, maintained public trails, drainage facilities, walls, maintenance access roads and/or future easements, except as provided in the Newhall Ranch Resource Management and Development Plan (RMDP) authorized by this permit. Further, to the extent practicable, any such facilities or trails outside the CE or RC shall be sited to minimize potential indirect impacts on the avoided, established, rehabilitated and enhanced wetland and non-wetland waters of the United States. The permittee shall receive written approval of the CE or RC from the Corps' Regulatory Division prior to each being executed and recorded.

8. During all construction activities in waters of the United States, the permittee shall clearly mark the limits of the workspace with silt fencing to ensure mechanized equipment does not enter the 576.9 acres of avoided waters of the United States, including adjacent wetland areas. Adverse impacts to waters of the United States beyond the Corps-approved construction footprint are not authorized. Such impacts could result in permit suspension and revocation, administrative, civil or criminal penalties, and/or substantial, additional, compensatory mitigation requirements.

9. The permittee shall provide all on-site contractors, subcontractors, and forepersons a copy of this permit. The permittee shall ensure that all of the above personnel read, understand, agree to, and comply with all terms and conditions of the authorization. A copy of this authorization shall be included in all bid packages for the project and shall be available at the work site at all times during periods of work and must be presented upon request by any Corps personnel. The permittee shall provide the Corps written confirmation of compliance

with this special condition prior to initiating construction activities in waters of the United States, including names, phone numbers, and addresses of all of the above personnel, including signatures indicating their understanding and agreement with this permit. As new personnel are brought onto the project during the construction phase, the permittee shall provide monthly written confirmation of compliance with this special condition to the Corps.

10. The permittee shall staff a qualified biologist on site during project grading and construction in the vicinity of waters of the United States to ensure compliance with all requirements of this permit. The qualified biologist shall document compliance with this permit. The permittee shall submit the biologist's name, address, telephone number, email address (if available), and work schedule on the project to the Corps a minimum of fifteen (15) days prior to the planned date of initiating impacts to waters of the United States authorized by this permit. The biologist/permittee shall report any non-compliance with the permit to the Corps Ventura field office (805-585-2148) within one day of its occurrence. The biologist/permittee shall submit a written report summarizing the non-compliance with the permit and any measures implemented to rectify the incident to the Corps Ventura field office within three days of the non-compliance.

11. The permittee shall ensure that all vehicle maintenance, staging, storage, and dispensing of fuel occurs in designated upland areas. The permittee shall ensure that these designated upland areas are located in such a manner as to prevent any runoff from entering waters of the United States.

12. No debris, soil, silt, sand, sawdust, rubbish, cement or concrete washings thereof, oil or petroleum products, from construction shall be allowed to enter into or placed where it may be washed by rainfall or runoff into waters of the United States. Therefore, the permittee shall employ all standard Best Management Practices to ensure that toxic materials, silt, debris, or excessive erosion do not enter waters of the United States during project construction. Upon completion of the activities authorized by this permit, any excess material or debris shall be removed from the work area and disposed of in an appropriate upland site.

13. The permittee shall install silt fence and fiber-fill barriers prior to grading to trap eroded sediments on-site and to divert runoff around disturbed soils. Silt fences and fiber-fills shall be placed along the tops and slopes of the access roads and at the limits of the construction corridor and project area, and any area that could pass sediment in the vicinity of any waters of the United States to prevent additional waters of the United States impacts and the spread of silt from the construction zone into adjacent waters of the United States.

14. The permittee shall discharge only clean fill materials suitable for the activities permitted herein.

15. Within 60 calendar days of completion of each phase of the authorized work in waters of the United States, the permittee shall submit to the Corps Regulatory Division a post-project implementation report providing the following information:

a. As-built construction drawings with an overlay of waters of the United States that were impacted;

b. Dated and labeled color photographs of waters of the United States that were permanently and temporarily impacted (including latitude and longitude coordinates); and

c. A summary of all project activities which documents that authorized impacts to waters of the United States were not exceeded, and demonstrates compliance with all the terms and conditions of the permit.

16. All correspondence and submittals shall reference the Corps project name and File Number (SPL-2003-01264-AOA), conspicuously on any transmittal letter and/or the first page/paragraph of the text, and on any graphics or photographs. All plans and photographs shall be labeled and dated. Failure to provide this information may cause the Corps to determine that the submittals are incomplete, not submitted by the due date, or non-existent, and therefore, not compliant with permit conditions.

17. Annual mitigation maintenance and monitoring reports shall be submitted to the Corps in April of each year, after the annual maintenance and monitoring has been performed. All required mitigation maintenance and monitoring reports shall be required for a minimum of 5 years for each mitigation area or as required until all performance criteria have been met. All annual mitigation and monitoring reports shall include all the information stipulated in the Mitigation Plan as well as the site specific mitigation plan.

18. Within 45 calendar days of complete implementation for each mitigation site, the permittee shall submit to the Corps Regulatory Division two copies of a memo indicating the following:

a. Date(s) all mitigation (grading, planting and irrigation infrastructure) was installed and monitoring was initiated;

b. Schedule for future mitigation monitoring, implementation and reporting pursuant to the Corps-approved Mitigation Plan and site-specific mitigation;

c. Color photographs taken at the mitigation site before and after grading, planting and placement of irrigation infrastructure; and

d. One copy of "as built" drawings for the mitigation site (all sheets must be signed, dated, to-scale, and no larger than 11 x 17 inches).

19. This permit does not authorize you to take an endangered species, in particular least Bell's vireo (*Vireo bellii pusillus*), unarmored threespine stickleback (*Gasterosteus aculeatus* ssp. *williamsoni*), arroyo toad (*Bufo californicus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), and coastal California gnatcatcher (*Polioptila californica californica*) or adversely modify designated critical habitat for any of the above endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA). The enclosed U.S. Fish and Wildlife (USFWS) Biological Opinion (BO) No. 8-8-09-F-44 contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the BO. Your authorization under this Corps permit is conditional upon the permitttee's compliance with all of the mandatory terms and conditions associated with incidental take in the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute non-compliance with this

permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

20. At the completion of construction for each phase of the project, education material, as approved by the Corps, regarding open space preservation, ESA and the Clean Water Act shall be developed to be distributed to all future homeowners. The permittee shall include in the Covenants, Codes, Restrictions and Easements for the development of the requirement that the homeowners association shall be responsible, in perpetuity, to ensure the information is available to all new homeowners. The above shall be completed prior to issuance of any occupancy.

21. The permittee shall comply with all the terms and conditions stipulated in the National Historic Preservation Act Section 106 Programmatic Agreement (PA) for the Newhall Ranch Resource Management and Development Plan dated 4 October 2010.

22. The permittee shall retain a qualified archaeologist to perform archaeological monitoring of the project site during earthmoving activities. The onsite archaeological monitoring activities shall be conducted by an archaeological monitor under the supervision of a person or persons meeting at a minimum the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61). The archaeologist should be onsite during earthmoving activities on a full-time basis.

23. Pursuant to 36 C.F.R. § 800.13, in the event of any discoveries during construction of either human remains, archaeological deposits, or any other type of historic property, the permittee shall notify the Corps Archeology staff within 24 hours (Mr. Steve Dibble at 213-452-3849, Ms. Amy Holmes at 213-452-3855, or Mr. John Killeen at 213-452-3861. The permittee shall immediately suspend all work in any area(s) where potential cultural resources are discovered. The permittee shall not resume construction in the area surrounding, i.e., immediately adjacent to, the potential cultural resources, until the Corps re-authorizes project construction, per 36 C.F.R. § 800.13.

24. The permittee shall bear the expense of treatment of all historic properties set forth in the treatment plan and PA. Such costs shall include, but not be limited to, pre-field planning, field work, post-field analysis, research, and interim, summary, and final report preparation (including draft and final versions) and costs associated with the curation of project documentation and all collections made from the historic properties. The permittee shall provide (10) bound hard copies and one electronic (PDF) copy of all draft and final reports to the Corps.

25. The permittee shall limit the total number of grade control structures in Potrero Canyon to a maximum of 60. The average height of the grade control structures shall not exceed 4 feet, with a maximum allowable height of 5 feet. The grade control structures shall be located to minimize impacts to or avoid localized aquatic vegetation or habitats, stabilize existing headcuts, and be sited in conjunction with road crossings. The preferred grade control design shall be a 3-foot-high step pool structure and constructed using ungrouted boulders. Ungrouted boulder step pools are the preferred method of stabilization however, in some locations specific site conditions could require an alternative design to provide adequate grade control. To deviate from the above grade control design criteria, the permittee shall prepare a detailed hydrologic justification and alternative design proposal for review and approval by

the Corps as part of the required Construction Notification process in Special Condition 4. The permittee shall forward a copy of any Construction Notification that includes a deviation from the above grade control design criteria to the USEPA, Region 9 Wetlands Section (Attn: Chief, Wetlands Section).

26. All road crossings in Potrero Canyon shall be constructed using soft-bottom, clear span arch culverts. The culverts shall be designed to have natural channel substrate placed at the equilibrium slope. Grade control structures shall be located at the upstream and downstream boundaries of road crossings and the arches for all the road culverts shall be designed to allow wildlife passage along the creek corridor. To deviate from the above road crossing design criteria, the permittee shall prepare a detailed justification and alternative design proposal for review and approval by the Corps as part of the required Construction Notification process in Special Condition 4. The permittee shall forward a copy of any Construction Notification that includes a deviation from the above road crossing design criteria to the USEPA, Region 9 Wetlands Section (Attn: Chief, Wetlands Section).

27. To maintain existing functions and services in the preserved and compensatory mitigation areas shown in Figure 12 of the Final Newhall Ranch Project Description dated August 11, 2011 attached hereto, the permittee shall neither undertake any new drilling, mining, exploring and/or operating, storing in, and/or removing of oil, minerals, natural gas and other hydrocarbons through the surface or the upper 500 feet of the subsurface for such resources nor allow new or additional surface entry associated with the above activities. This special condition does not apply to maintenance and construction activities located in existing pipeline corridors, defined as a 25-foot-wide area on either side of an existing pipeline, entry and surface disturbance associated with remediation and well field closure or new pipelines that are directly drilled under the preserved and compensatory mitigation areas, where the entry and the exit points of the pipeline are located outside of the preserved and compensatory mitigation areas.

28. The permittee shall:

a. Ensure that the existing oil and gas well sites (RSF076, RSF090, RSF093, RSF119, RSF122 and RSF139), specified on Exhibit 2 attached hereto, located in or adjacent to future Corps mitigation areas, are plugged and abandoned and surrounding areas remediated no later than October 15, 2028;

b. Within 180 days after the effective date of this Permit, install suitable erosion control best management practices (BMPs) between oil wells (RSF076, RSF090, RSF093 RSF119, RSF122 and RSF139) specified in Exhibit 2 and the waters of the United States and maintain such BMPs in good working condition until the wells are abandoned and remediated as described in section (a) above.

29. The permittee shall record a Declaration of Restrictive Covenant for Floodplain Protection that prohibits any development within the restricted area that would increase the base flood elevation (as defined by the Federal Emergency Management Agency) above that existing at the time of recordation, whether within the restricted area or upstream or downstream of the restricted area. The Declaration of Restrictive Covenant for Floodplain Protection shall prohibit any development within the restricted area that would otherwise contribute to increased risk of downstream flooding, whether or not resulting from increased base flood elevation. For purposes of the Declaration of Restrictive covenant, the term

"development" shall be defined to mean any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials, but excluding the following: agricultural activities, including farming, ranching, orchards and vineyards; installation of pipelines or utility lines of any kind; water diversions; outfall structures; or any activities associated with habitat restoration and enhancement.

30. In circumstances where construction and/or maintenance activities that include discharges of fill material in waters of the United States within the project site are transferred by the Permittee to other entities (sale of the Property as a whole is governed by the Corps' standard transfer procedures) and the Permittee intends to transfer permit authorization and its associated obligations to the transferee specifically related to subsequent construction and/or maintenance of that portion of the project that is transferred to other entities, the Permittee and the intended transferee shall submit a joint written notice to the Corps of the transfer. Permit responsibilities for the subsequent construction and/or maintenance activities in waters of the United States shall be transferred to the other entity in accordance with the procedures of this condition.

a. The notice shall indicate the precise total acreage, type, and location of permitted discharges of fill material into jurisdictional waters and the transferee's mitigation obligations, if any.

b. The notice shall contain an acknowledgment signed by the transferee that it accepts and will comply with the applicable terms and conditions of the permit as it pertains to the subsequent construction and/or maintenance of the constructed drainage improvements located within the transferred land.

c. Permit responsibilities shall be divided as follows:

i. The transferee shall be authorized to impact jurisdictional waters on the transferred land in accordance with the applicable terms, conditions, and special conditions of this permit;

ii. The transferee shall be responsible for complying with all the applicable terms and conditions of this permit as it pertains to the subsequent construction and/or maintenance of the constructed drainage improvements located within the transferred land. The Permittee shall remain solely responsible for implementing all other terms and conditions of this permit. The Permittee shall also remain solely responsible for implementing all terms, conditions, conservation measures and mitigation requirements included in the referenced Biological Opinion (No. 8-8-09-F-44).

iii. The Permittee and each transferee shall be solely responsible for its own actions under this permit. The Permittee shall not be liable for a violation of a term or condition of the permit by the transferee and vice versa.

31. Within 60 days following written Corps approval of the project-specific mitigation plan for each phase of the authorized project, the permittee shall provide to this office GIS data (polygons only) depicting the boundaries of all compensatory mitigation sites, as authorized in the project-specific mitigation plan referenced above. All GIS data and associated metadata shall be provided on a digital medium (CD or DVD) or via file transfer protocol (FTP), preferably using the Environmental Systems Research Institute (ESRI) shapefile format. GIS data for mitigation sites shall conform to the data dictionary, as specified in the current Map

and Drawing Standards for the Los Angeles District Regulatory Division, and shall include a text file of metadata, including datum, projection, and mapper contact information. Within 60 days following completion of compensatory mitigation construction activities, if any deviations have occurred from the approved project-specific mitigation plan, the permittee shall submit as-built GIS data (polygons only) accompanied by a narrative description listing and explaining each deviation.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

PERMITTEE
PRESIDENT, NEOHALE LAND

DATE 19 OCT 2012

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

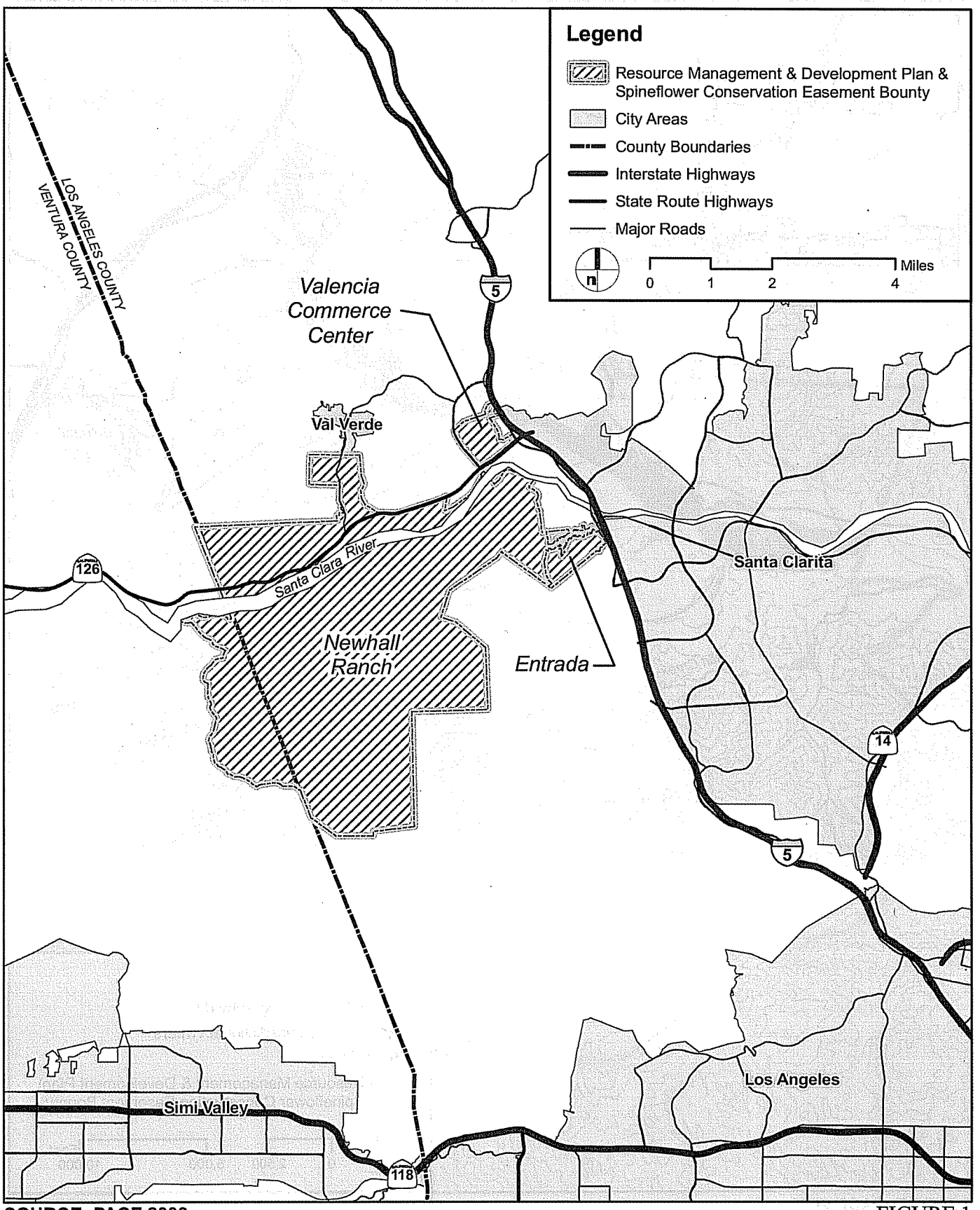
Colonel R. Mark Toy
District Engineer

DATE 19 OCT 2012

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFEREE

DATE

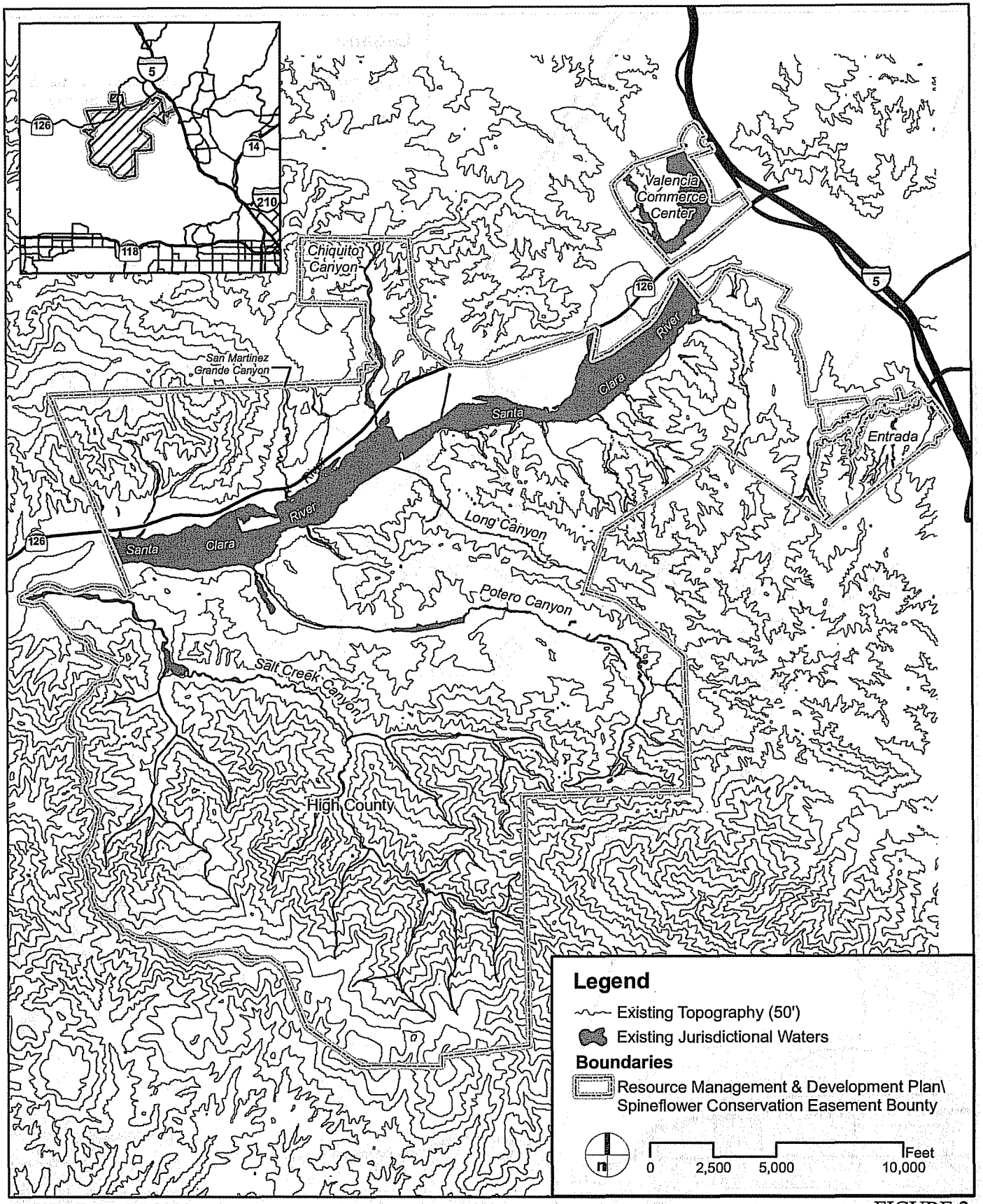


SOURCE: PACE 2009

FIGURE 1

VICINITY MAP

P:\8238E\GIS\mxds\LEDPA\ACOEPublicNotice_20100609\8238E_Figure2VicinityMapBWPC1_20100608.mxd



SOURCE: PACE 2009

FIGURE 2

JURISDICTIONAL WATERS WITHIN THE RMDP SITE

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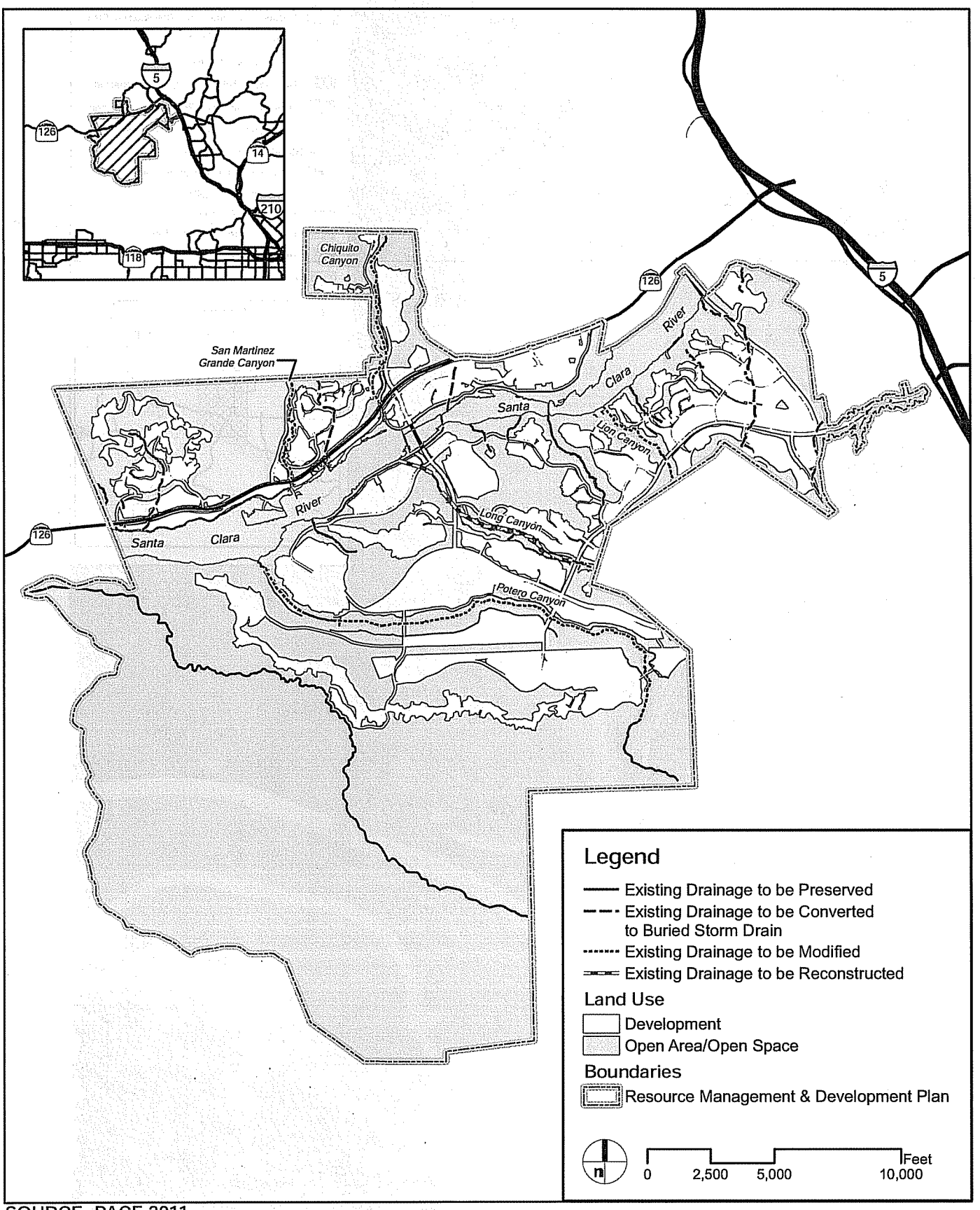

SOURCE: PACE 2011

FIGURE 3

FINAL LEDPA LAND USE

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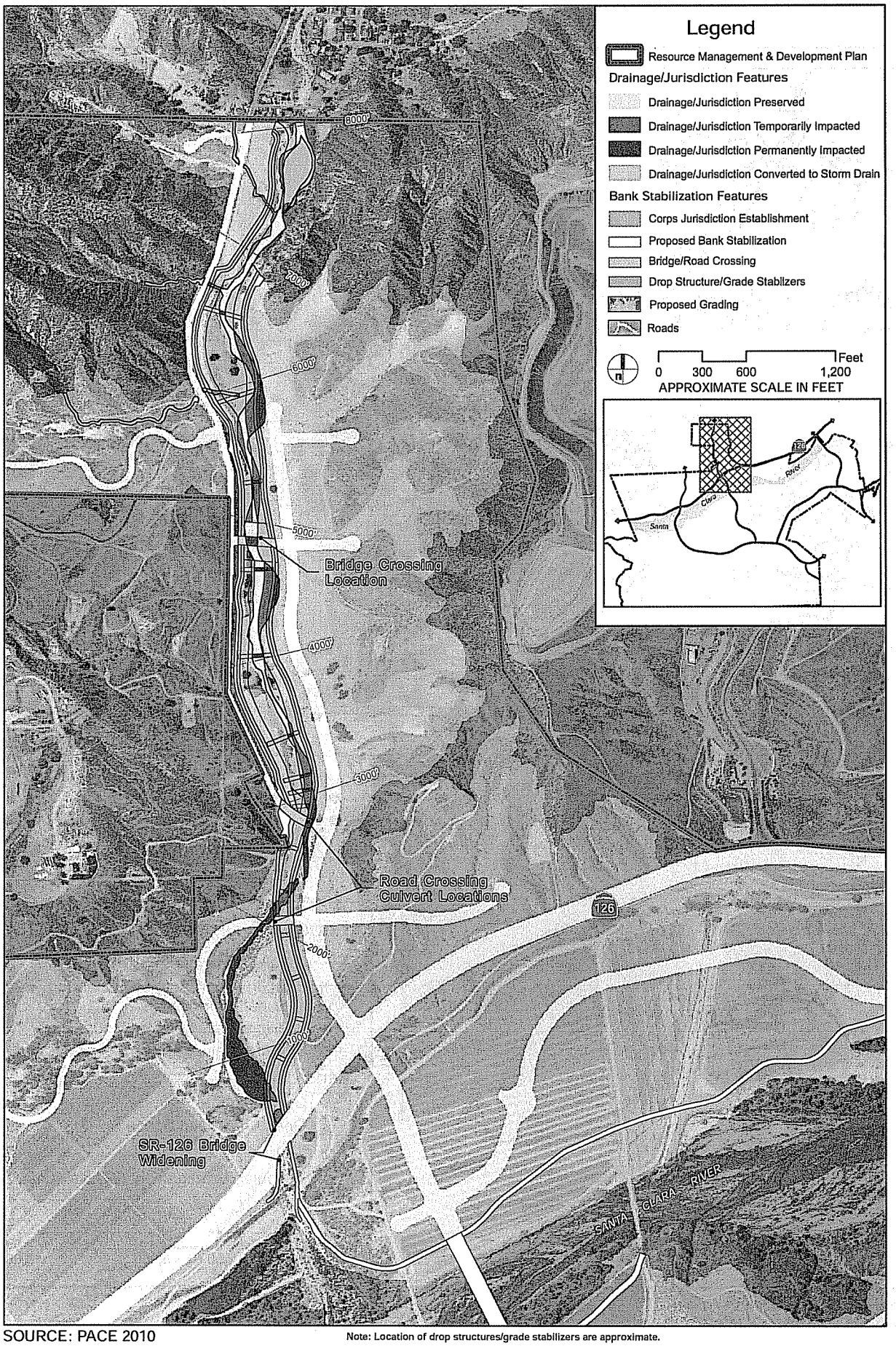


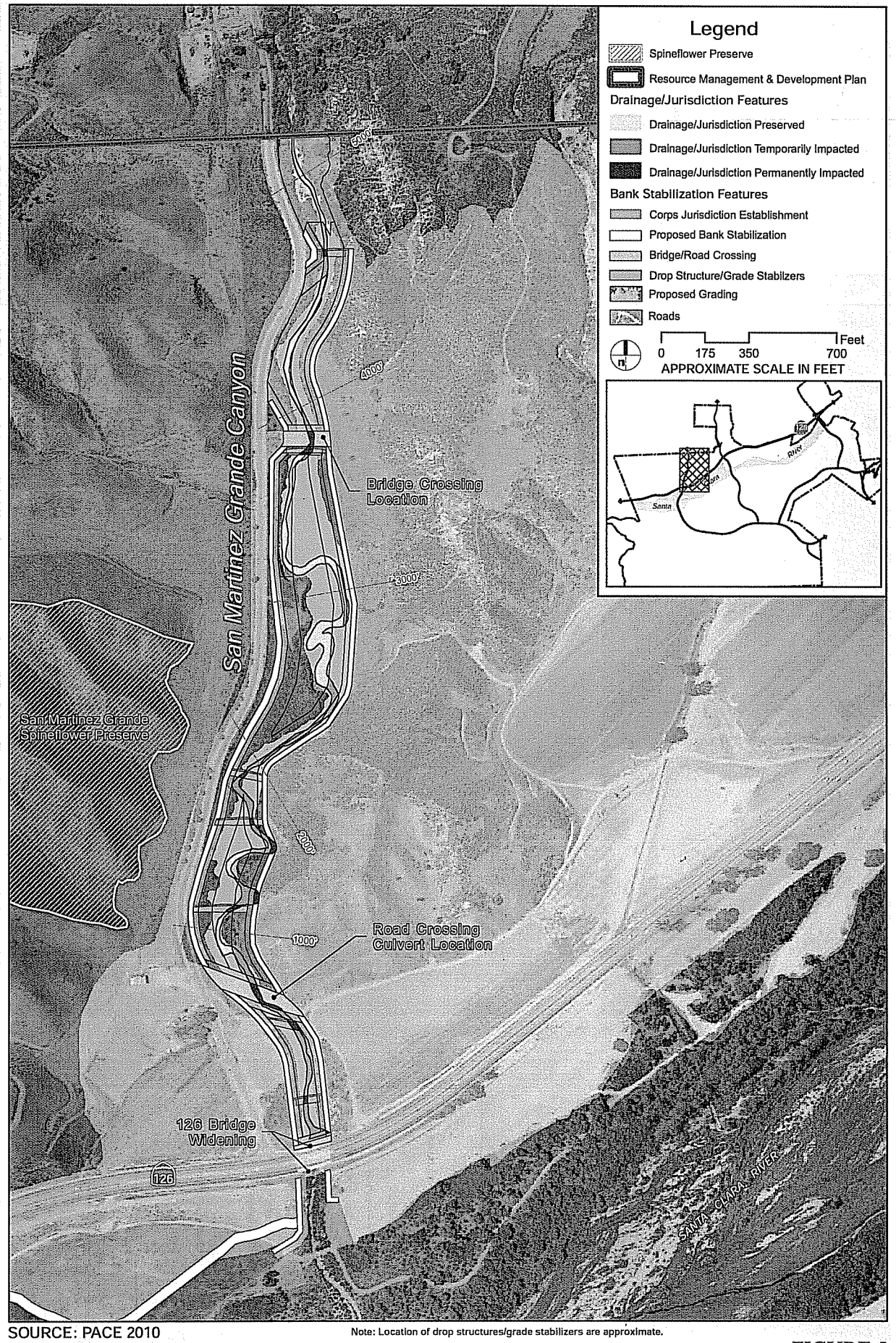
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 4

CHIQUITO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\8238\GIS\mxds\LEDPA\404B1_20101103\8238E_FIGURE-4_ChiquitoFinalLedpa_PC1_20110525.mxd



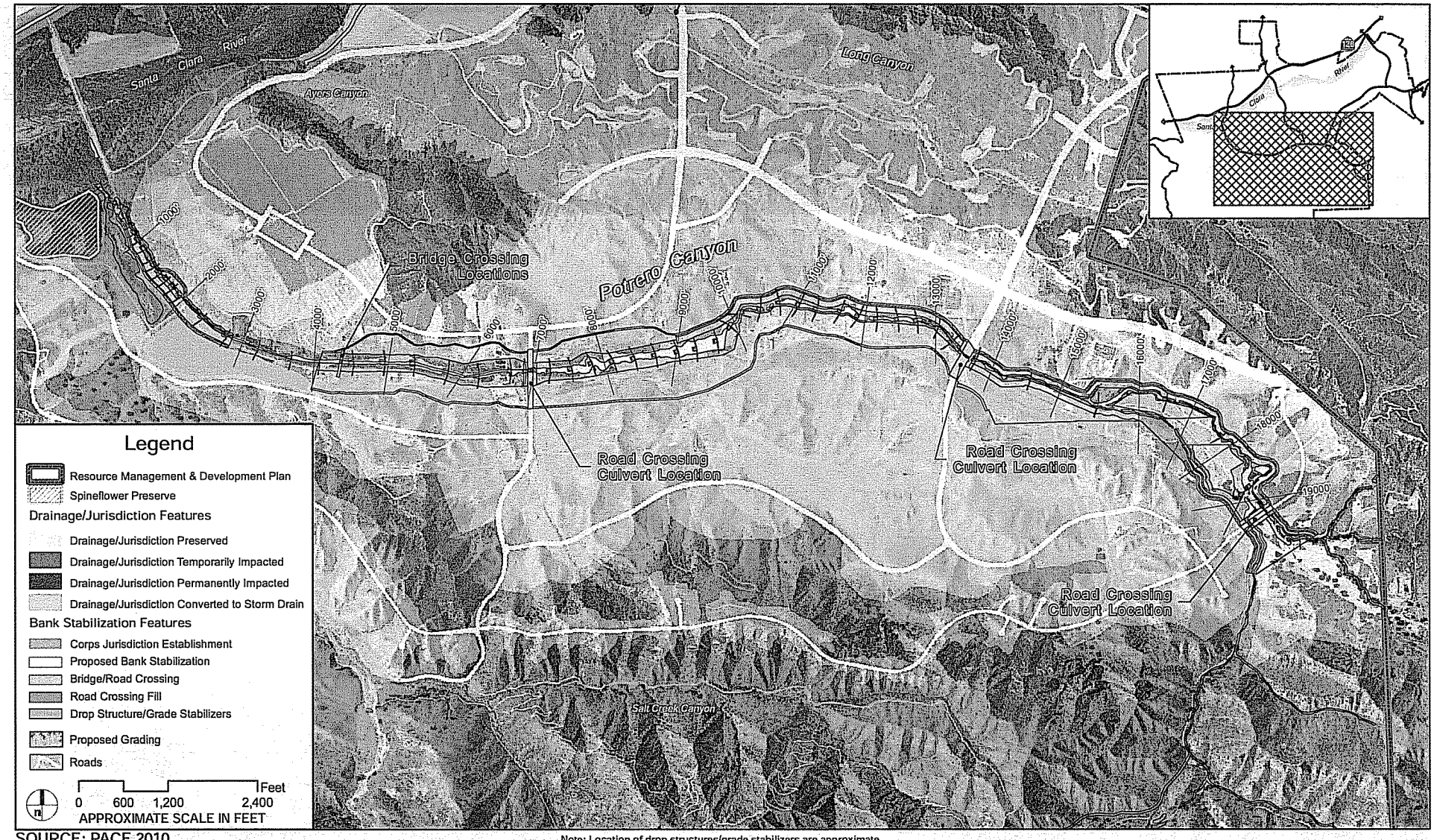
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 5

SAN MARTINEZ GRANDE CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\8238E\GIS\mxd\LEDPA\404B1_20101103\8238E_FIGURE-5_SanMartinezFinal.ledpa_PC1_20110525.mxd



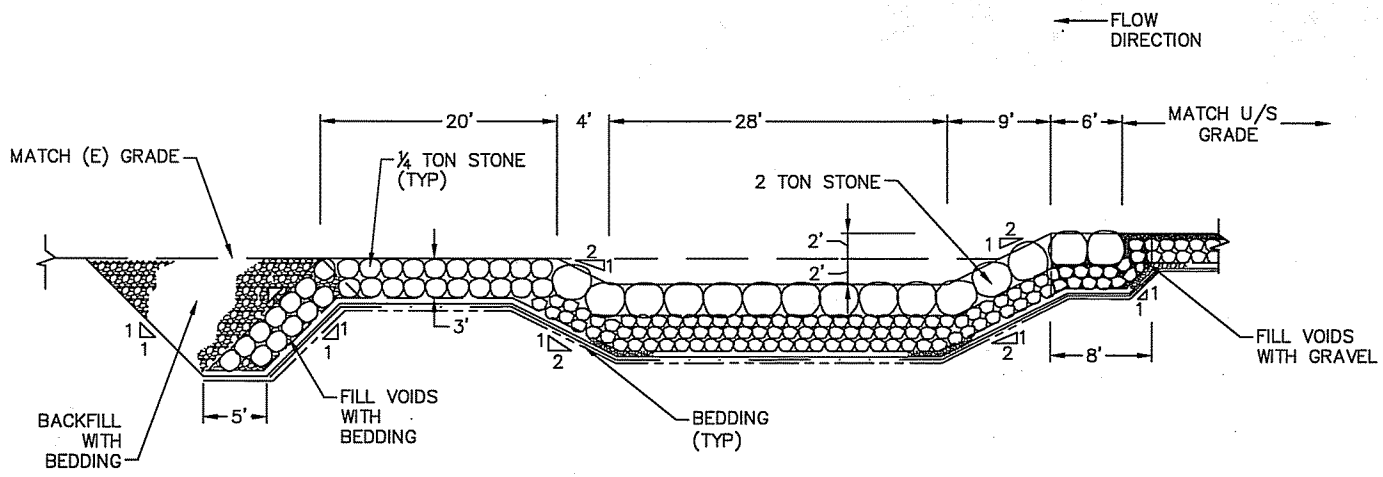
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 6

POTRERO CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\6238E\GIS\maps\LEDPA\404B1_20101103\6238E_FIGURE-6_PotreroFinalLedpa_PC1_20110330.mxd

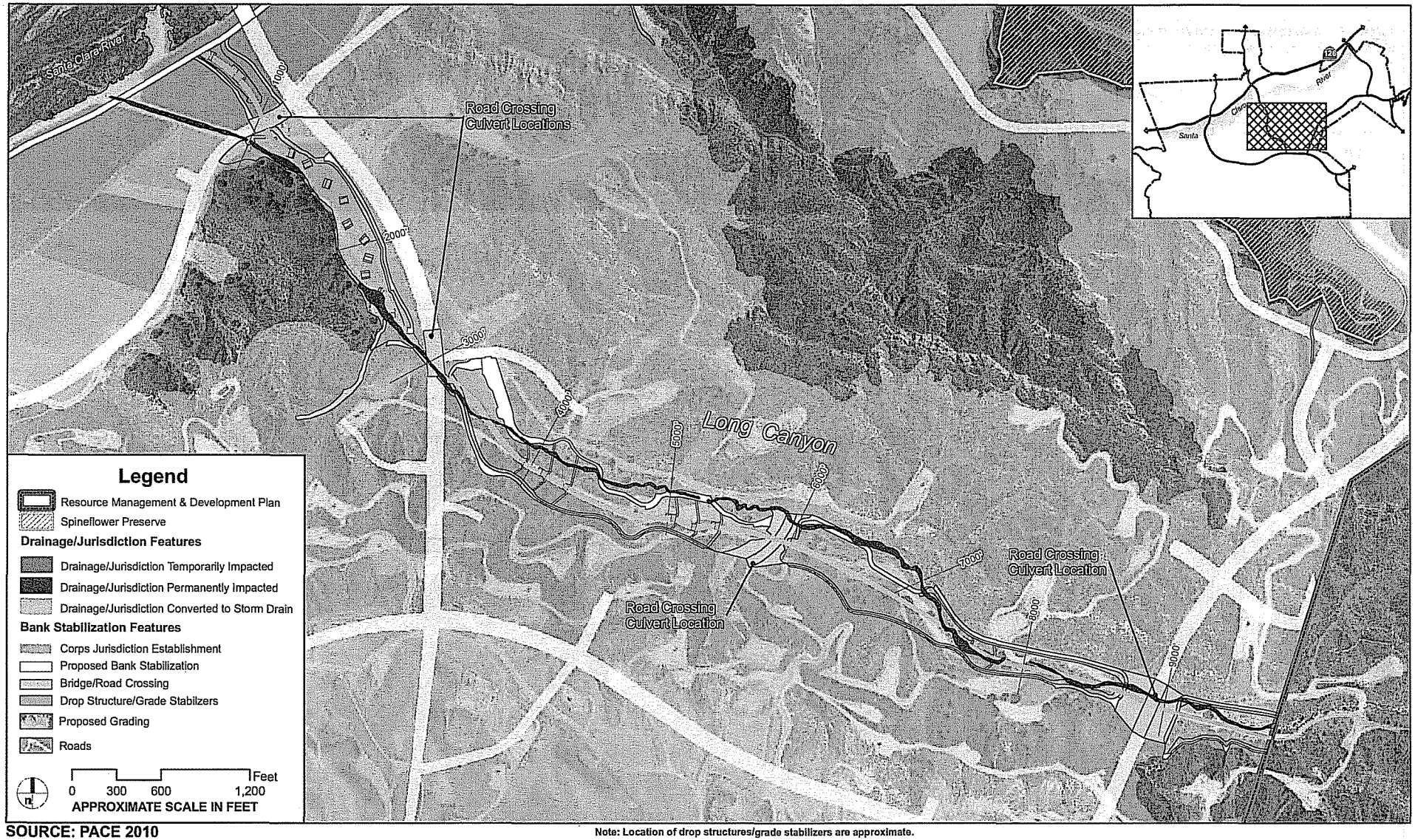


NOTES:
1. NOT TO SCALE
2. DIMENSIONS SHOW ARE FOR REFERENCE ONLY. STRUCTURE SIZE TO BE DETERMINED DURING DESIGN PHASE

FIGURE 7
POTRERO GRADE CONTROL STRUCTURE

ESA PWA

Newhall Ranch - Potrero Canyon Conceptual Design
Typical Detail: Grade Stabilization Structure - Profile



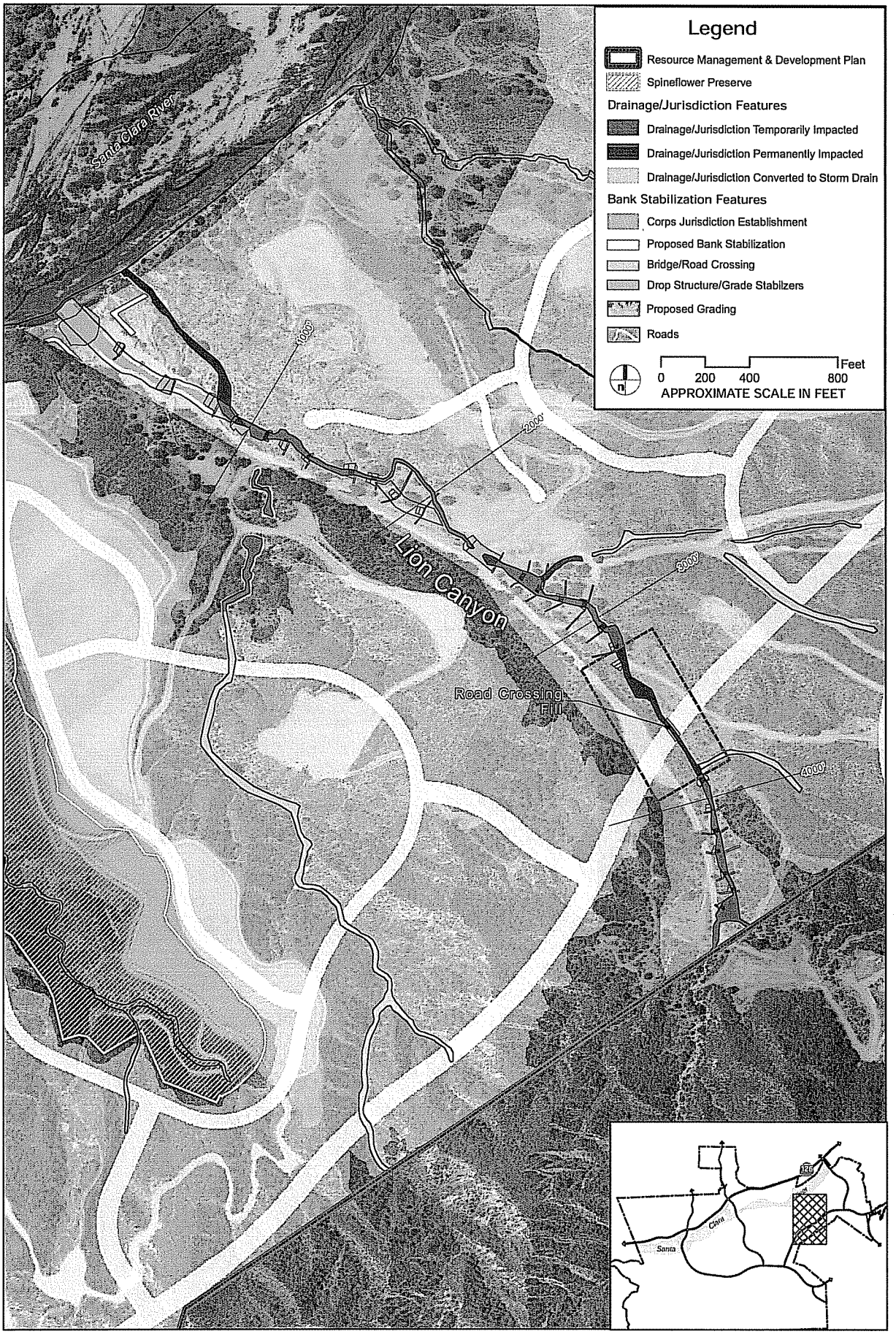
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 8

LONG CANYON DETAIL - NEWHALL RANCH RMDP
PROPOSED RMDP TRIBUTARY TREATMENTS

P:\0238E\GIS\mxds\LEDPA\404B1_20101103\0238E_FIGURE-8_LongFinalLedpa_PC1_20110525.mxd



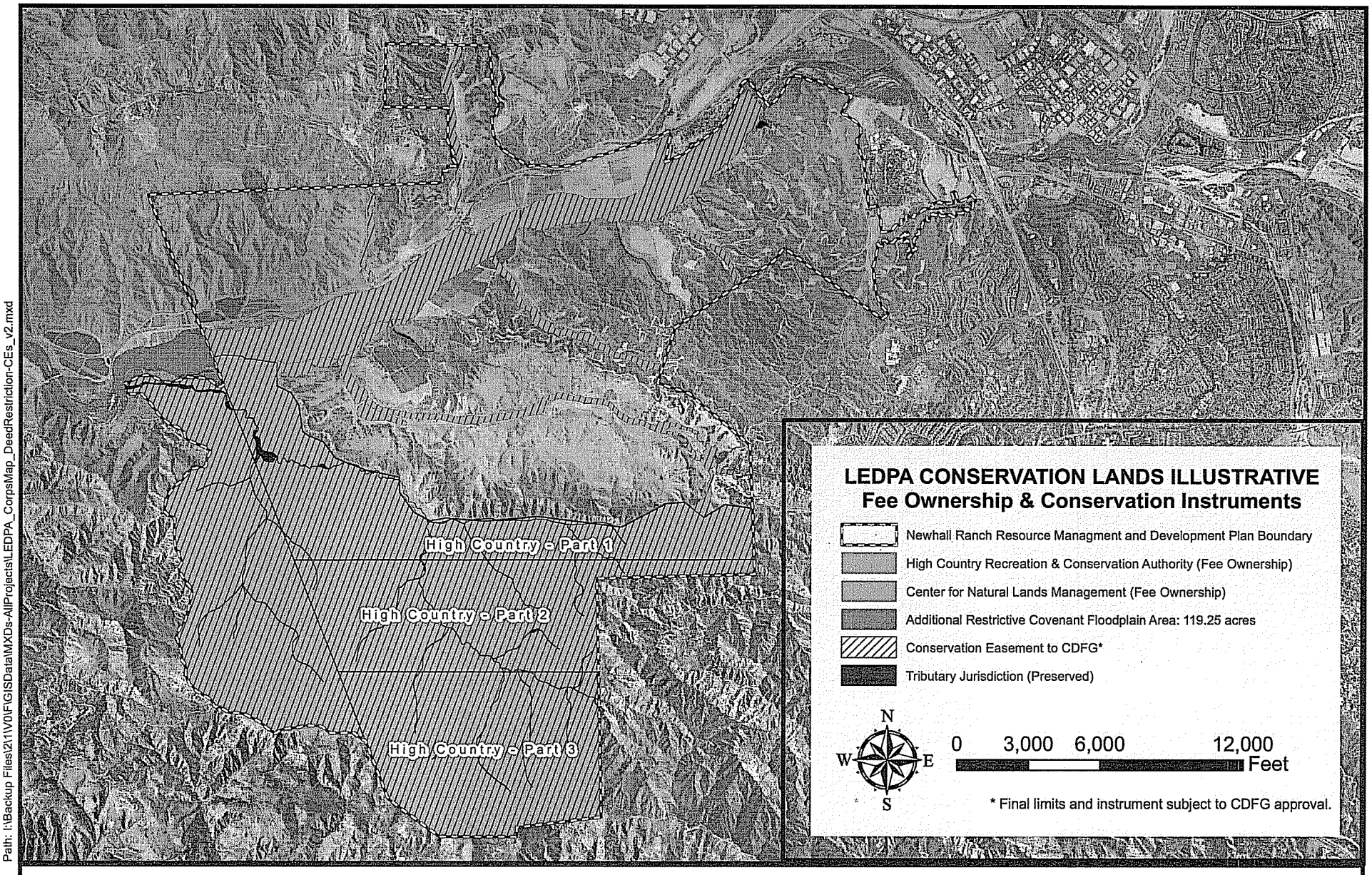
SOURCE: PACE 2010

Note: Location of drop structures/grade stabilizers are approximate.

FIGURE 9

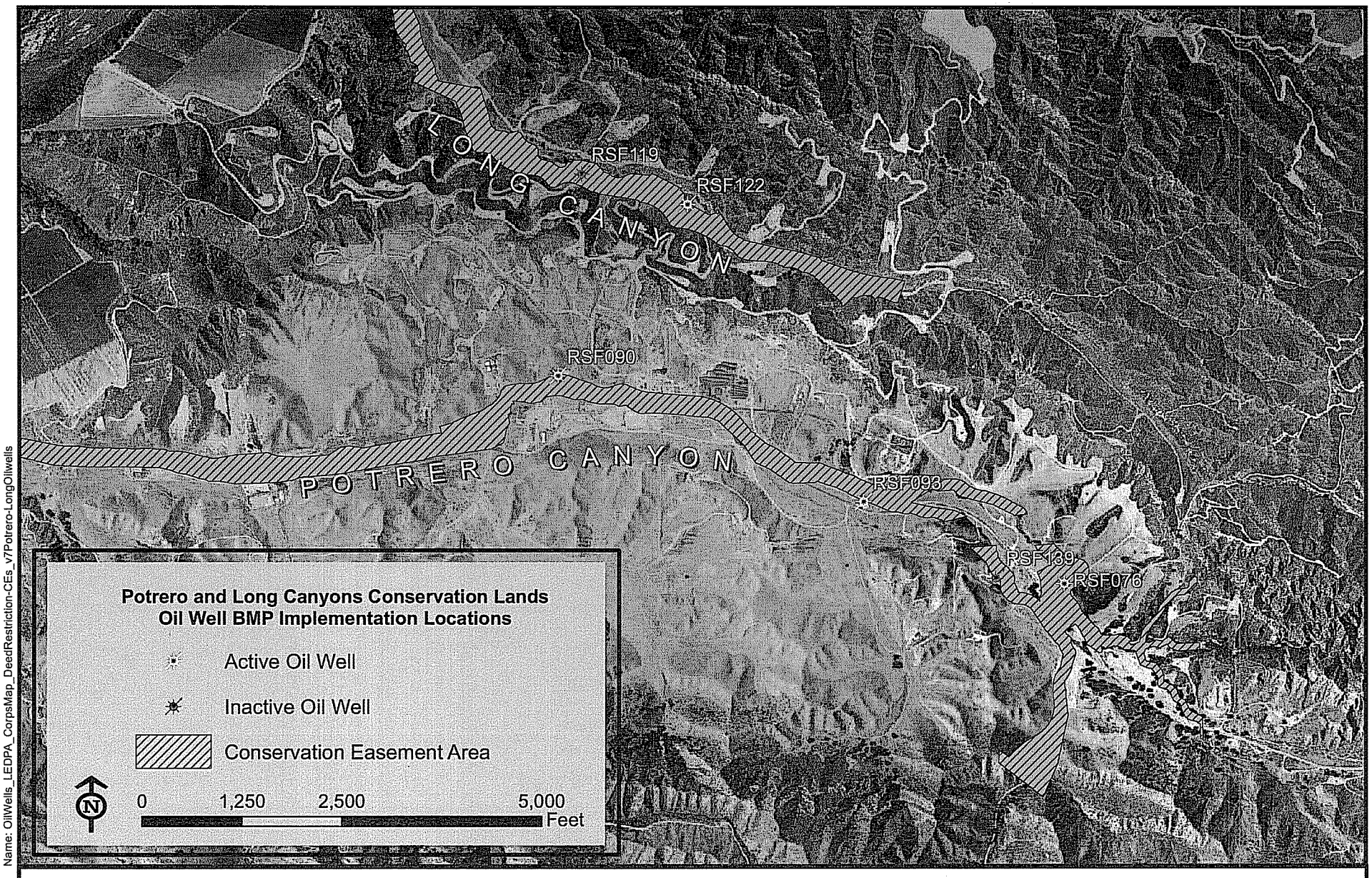
LION CANYON DETAIL - NEWHALL RANCH RMDP
RMDP TRIBUTARY TREATMENTS

P:\8236E\GIS\mxds\LEDPA\404B1_20101103\8236E_FIGURE-9_LionFindLedpa_PC1_20110525.mxd



Path: I:\Backup Files\21\1\V01\FIG\GISData\MXDs-All\Projects\LEDPA_CorpsMap_DeedRestriction-CEs_v2.mxd

EXHIBIT 1
CONSERVATION LANDS



Name: OilWells_LEDPA_CorpsMap_DeedRestriction-CEs_v7Potrero-LongOilwells

EXHIBIT 2
OIL WELL BMP LOCATIONS

Table 10: LEDPA Conservation Land Dedication/Recordation Schedule			
Open Space Area	**Conservation Instrument**	**Fee Ownership**	**Schedule/Phase of Development**
High Country SMA			
High Country (Part 1)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 2,000th Residential Building Permit
High Country (Part 2)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 6,000th Residential Building Permit
High Country (Part 3)	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	At Issuance of 11,000th Residential Building Permit
Salt Creek – Ventura County			
Salt Creek Watershed w/in Ventura County	Conservation Easement to CDFG	High Country Recreation & Conservation Authority (JPA)	Upon Approval of Potrero Canyon TTM
Santa Clara River			
Santa Clara River (LMV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Castaic Creek Confluence Area
Santa Clara River (LMV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Long Canyon Bridge Area
Santa Clara River (LMV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Landmark Village TTM Development - Castaic Creek at SR126 Area
Santa Clara River (MV Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - SJ Flats to Lion Canyon
Santa Clara River (MV Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - Middle Canyon Spring Area
Santa Clara River (MV Phase 3)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development - Commerce Center Bridge Area

Table 10: LEDPA Conservation Land Dedication/Recordation Schedule			
Open Space Area	**Conservation Instrument**	**Fee Ownership**	**Schedule/Phase of Development**
(CONTINUED)			
Santa Clara River (UC Phase 1)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction between Chiquito and San Martinez Grande drainages
Santa Clara River (UC Phase 2)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Utility Corridor Construction west of San Martinez Grande
Santa Clara River (WRP)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Newhall Ranch Wastewater Reclamation Plant (WRP) construction
Santa Clara River (HS)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Homestead Village South TTM Development
Santa Clara River (Pot)	Conservation Easement to CDFG	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development
Tributary Drainages			
Mission Village Preserved & Lion Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Mission Village TTM Development
Homestead Village South Preserved and Long Canyon Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead South Village TTM Development
Homestead Village North Preserved, Chiquito, San Martinez Grande Drainages	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Homestead North Village TTM Development
Potrero Canyon Drainage and CAM Mitigation Site	Conservation Easement to CDFG or Deed Restriction	Center for Natural Lands Management (CNLM)	At completion of Potrero Village TTM Development

Note: In addition, Newhall may not begin work in waters of the United States for any Pre-Construction Notification area, including the advance mitigation areas (the 19.3-acre wetland mitigation area in lower Potrero Canyon, the 15.9 acres of wetlands mitigation in the Santa Clara River at Mayo Crossing, and the 19.7 acres of habitat enhancement in portions of the upper Salt Creek watershed), until it has made an irrevocable offer of dedication to the Corps of a Deed Restriction or Conservation Easement within the Pre-Construction Notification area in a manner consistent with Master Streambed Alteration Agreement No. 1600-2004-0016-R5 and that permittee may not sell, transfer assign or otherwise divest itself of fee title for any real property within a future Conservation Area with first recording a deed restriction or conservation easement over the area.